THE

AMERICAN GAS-LIGHT JOURNAL

DEVOTED TO

LIGHT, HEAT, WATER-SUPPLY, AND SEWERAGE.

Iron Buildings, Nos. 254 & 256 Canal Street, East, near Broadway, New York.

VOL. II.—No. 20. NEW-YORK, MONDAY, OCTOBER 15, 1860. $3 PER ANNUM.

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ANTISELL on Photogenic or Hydro-carbon Oils. 1 vol. 4to. $1.75
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LE GAZ, Paris, per annum, $3.50.
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The flattering Testimonials we are receiving from Gas Officers, accompanied with expressions of such general satisfaction, and the fact of a tried experience for fourteen years, must present itself as a security to parties desirous of securing the most reliable Instruments. We therefore recommend our Patent Dry Gas-Meter, believing it superior to any Meter manufactured. Messrs. J. LENNIG & Co. confine their sole attention to the business of GAS-METER making.

Our materials are the best in use; the strictest attention is given to workmanship, and we guarantee entire satisfaction to all purchasers.

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Each Meter Tested Separately by a Sworn Inspector, and Sealed when desired.

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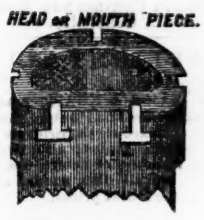
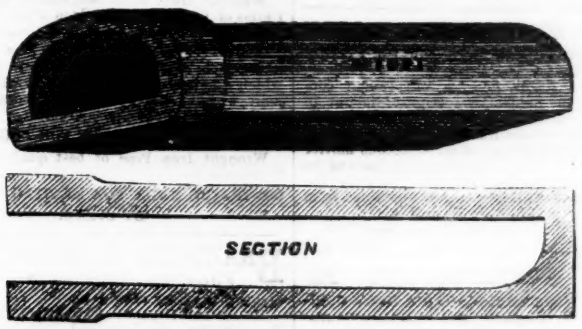
STOURBRIDGE, ENGLAND, FIRE-BRICK AND RETORT WORKS.





KING BROTHERS beg especially to call the attention of Gas Companies to the superiority of their Retorts, which are made from the celebrated STOURBRIDGE FIRE-CLAY. Mr. King has patented a Kiln for Burning Retorts, by which Patent all Cold Air is excluded from the Kiln while burning, thus rendering them

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By great care in Manufacturing, combined with the advantages in burning, a VERY SMOOTH SURFACE is obtained, rendering them less liable to carbonize

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He is authorized, however, to guarantee the *careful shipment of the best qualities of Cannel and Coal, at the lowest rates of Invoice and Freight offered at time of engagement;* and any losses sustained by short weight, or the neglect of the conditions mentioned, will be promptly and cheerfully repaired.

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I am, gentlemen, your very obedient servant,

CHARLES ROOME, *President.*

T. W. PARMELE, Agent,
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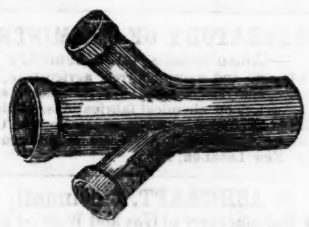

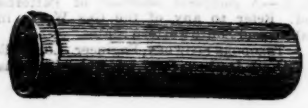

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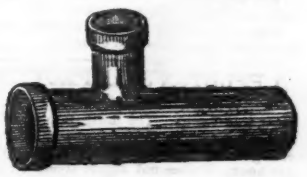

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BURTIS' PATENT COMPENSATING COUNTERBALANCE FOR GASOMETERS.—This Improvement consists in making the attachment to the Gas-Holder by counterweights in such a manner as to effectually prevent it from getting out of level so as to bind, and also to prevent any escape of Gas at Cup or Hydraulic seal where the Holder is on the Telescopic plan. Holders that work out of level, are thus evenly balanced, and prevented from binding or lodging against Tank-wall and falling down, thereby being rendered unfit for service. Where Holders or sections of Holders cannot be used on account of the above difficulties, this arrangement will remove them, and place the Holder in good working order; moreover, with this attachment, deep tanks are not necessary.

BURTIS' COUNTERBALANCE has been in use for three years at the Gas-Works, Chicago, Ill. Its resistance to high winds and snow-drifts, is alone sufficient to recommend its general adoption. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 221. Address

P. T. BURTIS,
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Works of all sizes furnished to suit applicants. Mains, Service and Distributing Pipes put in. Also, a large assortment of Gas-Chandeliers, and other fixtures, always on hand, at the lowest prices.

The MANSION HOUSE, BROOKLYN, with 250 burners in constant use, make their own gas with my apparatus, with results as stated above. This, (with a small one at my store,) can be seen in operation by application at my office, where descriptive pamphlets, with the names of numbers who are using them, will be furnished.

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FOR LIGHTING R. R. CARS, and Steamboats with Gas.—The whole process of filling the holders of a train requires but three minutes. Where the cars can stand on the track for thirty minutes, the gas is passed directly from the pump through the pipes and into the holders, thus doing away with the reservoir entirely; this may be done at either end of the road. This apparatus has been used on the New Jersey railroad nearly two years and for more than a year on the Camden and Amboy R. R., and the Philadelphia and Reading R. R. The Camden and Amboy R. R. Co. have the apparatus on all their cars, and on two of their Ferry Boats. The uniform flow of gas is secured by a Patent Regulator. This apparatus is also adapted to Steamboats making trips of not over three or four days in length, and to the head-lights of Locomotives.

It can be seen in operation at the Rooms of the AMERICAN GAS-LIGHT JOURNAL. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 245.

Apply to the
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GAS FOR THE COUNTRY.—C. WOOSTER, Manufacturer of Improved Portable Gas Machines, for Villages, Public Institutions, Churches, Hotels, Railroad Depots, Factories, Mills, Machine-Shops, Plantation Dwellings, &c. Office, 256 Canal street, near Broadway.

This Machine has been in successful operation for years, in many of the best residences and factories in the country, and for simplicity of construction, ease of management and economy of light produced, possess advantages over all other machines for the purpose now in use. It is adapted to the making of Gas from Crude Rosin or Rosin-Oil, producing a Gas of twice the illuminating power of Coal-Gas, at about one half the price usually charged for that gas.

Every Machine is sold under a strict guarantee to operate according to representation, and no payment required until the fact is demonstrated by actual use.

For further particulars, and descriptive pamphlet containing references to numerous parties now using the apparatus, address

C. WOOSTER,
No. 256 Canal-st., near Broadway, N. Y.

For Engravings, see AMERICAN GAS-LIGHT JOURNAL, for June, 1860, page 245.

☞ Responsible Agents wanted, with whom liberal arrangements will be made.

APPLETON'S IMPROVED GAS-Works, for Factories, Hotels, Dwellings, and Towns. The most simple and economical works in use, furnishing a superior light to coal gas at a cost of one half a cent per burner per hour. It does not injure trees, or plate, and is not affected by cold. For Circular and Terms apply to APPLETON & GRAHAM,
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For Engravings, see AMERICAN GAS-LIGHT JOURNAL for April, page 213.

ROSIN GAS-WORKS, for Factories, Hotels, and Public Buildings. These works may be seen in operation at the Berkshire Woolen Mills, Great Barrington, Mass.; Manchester Mills, Manchester, Conn.; A. A. Van Alen & Co's. Factories, Stuyvesant Falls, N.Y., and many other places JAMES O. MORSE & CO.,
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JOHN COX & CO., No. 696 Broadway, cor. of Fourth street, New York. Importers of French and English Gas-Fixtures of every description, Paris Clocks, Real Bronzes, &c. Manufacturers of Silver Ware.

MARSH'S PATENT ROSIN or Sun-Light Gas-Works, for Private Dwellings, Hotels, Factories, Railway stations, Sugar-Houses, Towns, &c. By the peculiar construction of the Retorts, the largest amount of decomposing surface is obtained in the smallest space. 2d. Gas is manufactured from crude rosin, without the least deposit of carbonaceous matter in the retorts or pipes: thus enabling them to be operated continuously, generating rapidly the best and cheapest illuminating gas obtained from this material. ALFRED MARSH & CO.,
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H. R. WORTHINGTON'S Patent Water-Meter.—This Meter combines accuracy, simplicity, and remarkable durability, with such ease and certainty of motion, as to offer no appreciable obstructions to the flow of water in the pipes to which it is connected, as it runs and registers upon three inches head, or when delivering the smallest stream. These qualities with its low cost, have caused its extensive adoption by corporations and individuals in many of our largest cities. Particular information can begiven at the office of the undersigned, where a Meter can be seen in operation.

For sale, at greatly reduced prices, WORTHINGTON'S STEAM PUMPS, extensively used by Gas-Light Companies. Also, a new and highly successful PUMP, driven by water-pressure, requiring no attention or repairs, and the most economical water-motor yet constructed.

Patent GATES, for Water and Steam-stops
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28 Broadway, N. Y.

One of these Water-Meters can be seen in operation at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

PHILADELPHIA GAS FIXTURE Works.—Warner, Miskey & Merrill, Manufacturers, Store, No. 718 Chestnut street, Philadelphia. Warner, Peck & Co., No. 376 Broadway, New York, would respectfully inform the public that they continue to Manufacture all kinds of Gas Fixtures, Lamps, Girandoles, Bronzes, &c., and that their large and varied stock comprises the simplest as well as the most elaborate patterns, designed by their French artists. They also continue to keep at their store, 376 Broadway, a large and full assortment of all their manufactured Goods. Dealers and others are invited to call and examine.

Gas Fixtures and Fittings. RINGUET-LEPRINCE & L. MARCOTTE, Warehouse, 347 Fourth street.—Manufactory, 55 West Sixteenth street, New York.

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Painting, Paneling, Cabinet Work, Looking-Glass Plates, Mirror Frames, Silk, Worsted and Woolen Materials, Aubusson and Moquette Carpets, Gas Fixtures, Bronzes &c.

GAS FIXTURES TO BE SOLD at Wholesale Prices.—In consequence of alterations in his store, the Subscriber is obliged to dispose of his entire stock of Gas Fixtures. Those wishing to purchase at very low prices will do well to call. Gas Fixtures removed. Gas fitting executed in all its branches.

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Water Closet Pans, Wine Basins, Wash Basins, Sinks, Fountains, Jets for public and private purposes, Stop-cocks, Filters, and all other Water apparatus.

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Manufacturers of the best quality of all the varieties of Connections for Iron Pipes; both Malleable, Wrought and Cast Iron. Also Meter Cocks, Lamp Cocks, &c.

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GEORGE H. KITCHEN & CO., Manufacturers of Fixtures for Gas Light purposes, Wood's Building, No. 561 Broadway, New York. Office of the Inspector of Gas Meters for the State of New York.

T. G. ARNOLD, Manufacturer of Gas Burners, Mercury Cups, Portable Sockets, Burner Pillars, &c., No. 447 Broome street (second door west of Broadway), New-York. Imported Scotch Tips and Burner Plyers always on hand

PATENT GAS-BURNERS.—Jas. McGLENSEY, No. 111 South Eighth street, PHILADELPHIA, Manufacturer of Gas-Burners, Meters, &c., respectfully calls the attention of Book-Binders, Chemists, Druggists, Copperplate Printers, Brush-Makers, Case and Cabinet-Makers, Hotels and Restaurants, to his Patent Gas-Stove Heating Apparatus, as being particularly adapted to their wants—preventing all soiling and injury to the vessels or substances heated, is entirely free from smoke or smell, and highly economical. He refers to the following persons, who have the Apparatus in use:

BULLOCK & CREELMAW, Nos. 103 & 105 N. 6th-st.
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HARPER & O'CONNELL, Manufacturers of Gas Shades and Globes of every description. FRENCH COLORED GAS SHADES AND SMOKE BELLS Nos. 63 and 65 Elizabeth street, corner Hester, New York.

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CAST-IRON PIPES.—EARL'S IRON WORKS, NEWARK, N. J., 91, 93, 95, 97 and 99 Chestnut street. Branch Office, 21 Centre street, New York.

The subscriber continues to manufacture Superior Cast-Iron Gas and Water Pipes, Branches, Bends, Angles, Bevel Hubs, Reduces, Sleeves, Drip Syphons, Plugs, Caps, Retorts, Bench Castings, and Castings in general, Particular attention paid to all Castings connected with Gas Works. E. B. EARL.

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GEORGE STACEY, Cincinnati, O., Manufacturer of single and Telescopic Gasholders, Wrought-Iron Bridges, Girders, Joists and Stairways, Coke and Coal Wagons, Rakes, Screens, and other Gas-works tools, Slide and Cup Valves, Bolts, Nuts, Chisels, Ladles and other tools, Wrought-iron roofs, for Slate and Corrugated Iron, Gas Purifiers, Washers, Centre Seal Valves and other Gas apparatus, Boiler-plate Retort Lids. Refer to—

Cincinnati Gas Light & Coke Co.
Nashville Gas-Light Co.
Springfield Gas-Light Co.
Columbus Gas-Light Co.
Cleveland Gas-Light Co.
Covington and Newport Gas Light Co.
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GAS-LIGHT STOCKS FOR SALE. THREE HUNDRED THOUSAND DOLLARS of Stocks in various Gas-light Companies in the United States, paying from 6 to 12 per cent, dividend, for sale by JOHN B. MURRAY, Rooms of the AMERICAN GAS-LIGHT JOURNAL, N. Y.

POOLE & HUNT, Baltimore, Md., are prepared to execute orders for
GAS-HOLDERS,
IRON-ROOF FRAMING,
And all other Descriptions of
Iron Work for Gas-Works, Water-Pipes and Heavy Castings and Machinery Generally.

TO GAS-LIGHT AND WATER Companies:

SARONY, MAJOR & KNAPP, practical Lithographers, Engravers and Printers, No. 449 Broadway, design and execute CERTIFICATES OF STOCK for Gas and Water Companies; also, CHECK AND NOTE BOOKS, with Vignettes of Meters, Gas-Holders, Reservoirs, &c., and all other special and commercial work, at the lowest prices.

DANIEL THOMPSON, Machinist and manufacturer of Stop Cocks, Fire Plugs, &c., for Water-Works, STOP COCKS, VALVES, DRIP PUMPS, &c., for Gas-Works, No. 133, Elfreth Alley, Philadelphia.

FREEZING OF GAS-PIPES.— Walton's Patent Anti-Freezing Apparatus illustrated by engravings, in the AMERICAN GAS-LIGHT JOURNAL, of Jan., 1860, page 141, is the most simple, durable and efficient of any known process.

According to Professor Faraday, the watery vapor contained in illuminating gas amounts to 0·0093 parts where the gas is at a temperature of 40°, or in other words, that there are 1, 7-10 *gills water in every* 1,000 *cubic feet of gas* at that temperature. It is the deposit of this water in the form of frost that closes the exposed pipes.

Walton's plan is, in a few words, to supply this water with a sufficient quantity of alcohol (98–100ths), the vapor of which will enable it to pass through the most exposed pipes, unaffected by frost. Experiments of three years prove that one gill of such alcohol will protect 1,000 feet of gas at any temperature. Private houses, Hotels and Gas-works, can be thus guarantied from frost by the use of Walton's Anti-Freezer, which consists of but two or three small castings, at the most trifling cost. It can be applied at Gas-works without altering any of the pipes; and the expense of labor and the alcohol will not exceed two cents per 1,000 feet of gas.

It can be seen in operation at the rooms of the AMERICAN GAS-LIGHT JOURNAL, where orders will be executed at once.

Read the Following Testimonials:

GAS-WORKS, CINCINNATI, O., 24th May, 1858.
MR. JOHN WALTON, Louisville, Ky.:

DEAR SIR,—At an earlier date, I intended to have written you the result of my experience during last winter, in regard to your patented apparatus to prevent the freezing of gas in pipes. I am quite convinced that both in theory and practice your apparatus is correct, and in no case will it fail to prevent the freezing in pipes of our illuminating carburretted hydrogen gas, provided attention is paid to renew the alcohol often enough in proportion to the amount of gas passing through the anti-freezing apparatus.

Yours truly, JOHN JEFFREY.

OFFICE LOUISVILLE, KY., GAS CO.,
March 30th, 1860.

In the winter of 1856, this Gas Company first applied John Walton's patent method for the prevention of Frost in Service Pipes,—to this date we have used it with perfect success. *This Company have Purchased the Right to this Patent for Louisville, Kentucky.*

The application of a vessel, containing a small quantity of alcohol, placed between the gas main and an open area connected with a building, through which the service pipe was laid, has always prevented the freezing or stoppage of the service pipe, although the temperature may have ranged from the freezing point to several degrees below zero.

As the alcohol absorbs from the gas any vapor of the water that may be passing off with it, after passing the vessel containing alcohol, there remains in the gas nothing that can freeze or close the pipe. *This simple application, we have proved to be an effectual safeguard against the closing of gas pipes with frost.*

ROBERT G. COURTENAY, President.

ANALYTICAL & Manufacturing Chemistry.—Gesner's Chemical and Engineering Rooms, 24 William-street, New York Rooms No. 28 and 29. Analysis made of all mineral and commercial articles Coal oils tested, coal oil works erected, and contracts made. The best processes for purifying and deodorizing; coal and petroleum oils furnished, with skilful workmen and superintendents. Mines surveyed and coal tested.

The Kerosene patents, from which the coal oil business in the United States originated, were granted to Dr. Gesner, Chemist and Geologist.

LABORATORY OF CHEMISTRY, —Consultations on Chemistry applied to arts and manufactures, agriculture, metallurgy, analysis of ores, mineral waters, soils, &c. Advices on chemical fabrications. Address, Professor H. DUSSAUCK, Chemist, (from the Conservatoire Imperial of Arts and Manufactures, Paris) New Lebanon, N. Y.

S. S. ASHCRAFT, Cincinnati, O., Manufacturer of Gas and Water-Pipes, with Branches of every description; Retorts for Gas and Oil Works; Gasholder Stands, Columns, &c., Gas Purifiers, Condensers, and Gas Apparatus of all kinds; Foundry Work in general.

N. B.—A complete selection of Patterns on hand. Refer to any of the Gas Works in the Western and Southwestern States.

THEODORE SCOWDEN, Engineer, Louisville.
JOHN JEFFREY, Civil Engineer, Cincinnati.
JACOB HOUGHTON, Engineer, Detroit.

PRESENCE OF SULPHUR IN COAL-GAS.

To the Editor of the AMERICAN GAS-LIGHT JOURNAL:

Your JOURNAL of August 15th, page 54, contains an article from the *Quarterly Journal* of the London Chemical Society, on the presence of Bi-sulphide of Carbon in the London Coal-Gas, and on the amount of Sulphurous Acid formed by its combustion. As the presence of sulphur compounds in coal-gas is considered a sufficient cause for excluding it from libraries, picture galleries, &c., and as even people of delicate constitution attribute to it an injurious effect upon their system, it was considered desirable to ascertain the precise amount of sulphur compounds in the Manhattan Gas which at present fail to be removed by the ordinary methodt of purification.

A small jet of gas, seven cubic feet in 24 hours, was burnt in a bent glass chimney, surrounded by a cooling apparatus, and the condensible products of combustion were collected in a two-necked receiver, which contained a little pure nitric acid. To retain any trace of sulphurous acid which might escape condensation and oxydation, the current air had to pass through a glass tube loosely filled with filaments of asbestos, which were moistened with nitric acid. The sulphurous acid being therebp oxydized to sulphuric, it may be safely assumed that no weighable portion of sulphurous acid can have escaped. The quantity of sulphurous acid was afterwards determined in the usual way, as sulphate of baryta. Seven cubic feet of gas gave 0·0675 grammes of sulphate of baryta, which corresponds io 0·132 grammes, or 2·03 grains of sulphur for 100 cubic feet of gas; and comparing it with the London Gas, we find:

		Quantity of Gas consumed	Amount of sulphate of baryta in grammes.	Am'nt of sulphuric acid in 100 cubic feet, in	
				gr'ms.	grai's.
London Gas,	In July, 1859.....	2	0·071	0·488	7·54
	In December, 1859 and January, 1860.....	2	0·0938	0·644	9·94
Manhattan Gas.....		7	0·0675	0·132	2·03

The quantity of sulphur in the Manhattan gas is therefore less than one-fourth of the average amount in the London gas, and is indeed so small, that all the gas burnt in an ordinary parlor on a winter evening would not produce more sulphurous acid than the brimstone matches employed in lighting it. Even this minute portion could be removed by the consumer if he thought proper to do so, by passing the gas after it leaves the meter over alcohol containing a little potash. But this probably will not be deemed of sufficient consequence by any one.

We are indebted to the courtesy of Dr. Torrey, the chemist of the Manhattan Gas-Light Company, for the above information, obtained from the records of the laboratory at the Eighteenth street works, belonging to this Company. The experiments were made under the Doctor's advisement, by his talented assistant, Mr. Carl Schultz. Yours truly,

CHARLES ROOME, President.

NEW-YORK, Oct. 12th, 1860.

THE ELECTRIC LIGHT.

Some exceedingly interesting experiments took place on a recent occasion in the neighborhood of Osborne house the beautiful marine residence of her Majesty, in the Isle of Wight, and also in Cowes roads, with Professor Way's Electric Light, and which, we believe, are preliminary to more important experiments about to be carried out by the government. The principle of the light is simply the application of electricity to a column or running stream of quicksilver—in this instance as fine as the point of a lady's needle. So long as the voltaic battery retains power to act with its wires upon this column, so long must the light burn—the strongest and purest light in the known world, and the nearest approach to sunlight that the skill of the chemist and man of science have yet produced, and this without actual combustion taking place, or the quantity of the mercury being reduced, the supply of acids to the battery being its sole expense, after its first cost, besides wear and tear. The Professor, with his apparatus, left Portsmouth harbor in a steamer shortly before dark, on Tuesday evening, and steered direct for Cowes. On the sponson of the steamer was placed the battery; abaft the foremast hung one of the Professor's simple apparatuses, as a mast head light; on a movable circular platform, placed on the vessel's after-hatch, a similar apparatus to the one hung up aloft stood, to which was attached a lens, but both of them as yet unlit. The apparatus is of the simplest possible form, consisting merely of an oval-shaped pair of tubes, connected at each end, a round hollow globe about the size of an orange, in which is placed the mercury.

The mercury runs from a point to a cup in the centre, enclosed within a glass tube, and here the subtle liquid is heated to a white heat as it flows in a fine stream from the upper ball into the cup, and thence into the lower one, thus producing an indestructible wick. The wires which connect the battery with the apparatus were made by Messrs. Silver, and are, perhaps, the most perfect of their kind yet constructed. These wires are coated with silver, enclosed in india rubber, and have an outside coating of braided hemp, the whole pliable as common packthread. To look at the light, with a view to a close inspection of the cup, with the naked eye, would be about as useless as to look at the sun at noon day. A pair of colored glasses, however, show that this light, which can only be compared to the sun for its brilliancy and power, as only of the same circumference as the cup itself—the size of a three penny piece, and of litle more diameter. Midway between the aftermost light and voltaic battery is a brass standard a few inches high, with which the wires are connected, and by pressing a button on the top of this, simple as the key of a piano, the light can be given in flashes of as long or as short a duration as the operator pleases. This is, however, more beautifully and correctly carried out by a small instrument of Mr. Way's. It consists of a piece of clock-work, having in front a revolving disc, the face of which is covered with numerous holes with pins to fit in as may be required.

In front of the disc are two small cylinders with pistons and arms attached. As the disc revolves, the pins in its face lift the pistons in the cylinders, and cut off the connection between the battery and the lightning apparatus produces flashes of light of any duration that may be required, with their accompanying intervals of darkness, and admirably adapted for a revolving light, or as a code of signals for night service. In fact, there would appear to be no limit to the uses to which this discovery may be applied, and so simple in its manipulation, that the choicest music of the great masters may be henceforth accompanied by expressive flashes of electric light. When the steamer arrived off the Mother bank, the light aloft was lit by attaching to it the ends of the wires from the voltaic battery. So soon as the glass tube became sufficiently heated to throw off the mercury from its surface, the light exhibited its power and beauty, the steamer's usual mast-head light, which was hoisted in its usual position, appearing but a dull red speck alongside it. Its effect upon the human countenance was, however, by no means favorable, casting on all on board the steamer a strange unearthly hue. Mauve color as it has become fashionable to term it on the ladies' dresses or bonnets, was brought out by the light with astonishing brilliancy.

On reaching Cowes roads, crowded with yachts and all displaying lights, the contrast between the electric light and those shown by the yachts was something wonderful. The electric light was shining in its pale pure brilliancy aloft, while the hundreds of lights displayed by the yachts and by the town of Cowes, its club-house, and hotels, dwindled down to dull red specks. The lens applied to the after light threw broad pathways of light to and fro as the lens might be directed, bathing the low black hulls of the craft that were in the line of light with a flood of sunshine, as also the delicate tracery of their rigging. A boat which left the steamer here for one of the yachts, was lighted on its way by the lens.

On the steamer's return, Norris Castle was passed, and the light thrown on its picturesque front. Ivy covered towers, walls and parapets, were illuminated as with a stroke from the enchanter's wand. Off Osborne house the steamer was stopped for some time, and the light must have shown itself with good effect on the still waters of the Solent, in front of the beausiful marine residence of Her Majesty. The experiments, which, as already stated, are only preliminary to more important ones, were considered to have been fully satisfactory. With a light on this principle, under her bows, the Great Eastern herself might have lighted her path across the waters of the waters of the Atlantic.

TARRYTOWN, N. Y.—George Dwight & Co., or as the firm is now, Dwight, Dimmock & Co., builders, with their iron retorts. Length of mains four miles, from two to six inches diameter. Code, Hopper & Gratz's meters, Schœner's gasholder. Newcastle coal at $6 25 per long ton.

SCRANTON, PA.—S. S. Battin & Co., builders of works. Merrick & Sons' iron retorts, Code, Hopper & Gratz's meters. Length of mains three miles, ranging from three to six inches. Coal, Pittsburg, $6 to $7 per 2000 lb. Meter rent 12½ to 25 cents per month.

WILLIAMSPORT, PA.—These works were built by William F. Denowsky, of Allentown, Pa., and have since been materially improved. Use iron retorts of J. B. Hall's make—Harris & Brothers' wet meters—Pittsburg coal at $6 per 2,000 lb. No charge for meters. Made about 2 000.000 cubic feet of gas in 1859.

ROCHESTER, N. Y.—One of Battin, Dungan & Co.'s works, and has proved entirely equal to the Company's requirements. Clay retorts of T. Hoadley's manufacture have been introduced, and are now being worked in connection with R. A. Brick's iron ones. The wet and dry meters are from Down's & Gratz's factories, and two gas-holders, each 60 × 20 from Joseph Aymer, Philadelphia. Length of mains about 25 miles, from 3 to 12 inch diameter. Coal used is from Beaver, Sterling and Ormsby mines. No rent is charged for meters, except to consumers whose bills are too trifling to pay for the outlay. An opposition company was organized in Rochester, but it has recently merged into the old company, and the price of gas reduced to $2 50.

WHERE IS THE LARGEST GASOMETER?—The Philadelphia *North American* in rapping knuckles with the New York *Times*, says "Philadelphia has the largest gasometer in the world." The gas-holder at Point Breeze is 160 feet in diameter, 95 feet high, and contains 1,800,000 cubic feet of gas. The gas holder erected in 1858 at the Imperial Gas Company's Works, in London, is 201 feet in diameter, 80 feet high, contains 2,500,000 cubic feet of gas, and cost upwards of $200,000. It contains 1,500 tons of iron, and required 5,000 cubic feet of stone, and 2,000.000 bricks in the construction.

A NEW ELECTRICAL LIGHT.—Some experiments have recently been made in England with a new electrical light—the apparatus the invention of Professor Way. The principle of the light is simply the application of electricity to a column or running stream of quicksilver—in this instance as fine as a point of a lady's needle. So long as the voltaic battery retains power to act with its wires upon this column, so long must the light burn—the strongest and purest light in the known world, and this without actual combustion taking place, or the quantity of the mercury being reduced, the supply of acids to the battery being its sole expense after its first cost, excepting wear and tear The apparatus consists merely of an oval-shaped pair of tubes connected at each end, a round hollow globe about the size of an orange, in which is placed the mercury. The mercury runs from a point to a cup in the centre, enclosed within a glass tube, and here the subtle liquid is heated to a white heat as it flows in a fine stream from the upper ball into a cup, and thence into the lower one, thus producing an indestructible wick. The light, which can only be compared to the sun for its brilliancy and power, is only of the same circumference as the cup itself—the size of a three penny silver piece. By a simple arrangement, cutting off at intervals the connection between the battery and the apparatus, flashes of light of any duration may be produced, with their accompanying intervals of darkness, most admirably adapted for revolving lights. The invention promises to be one of the most useful.

THE PRAIRIE GAS STONE IN 1694.—The fact that oils could be obtained from stones was known as long ago, at least, as 1694, when a patent was granted in England for that purpose. The extract was first made from bituminous shale, and from the black, pitchy rock found overlaying the English coal beds. The use of this oil has been limited to medicinal purposes, and in rare instances for light and the lubrication of fine machinery, until within fifteen years. It now promises to supersede both tallow and sperm. The best coals for producing oils in this country are found in New Brunswick, Kentucky, Virginia, Ohio and Pennsylvania.

OIL WELLS OF THE ALLEGHANY.—A gentleman from Tionesta informs the Venango *Spectator* that he counted one hundred and sixty derricks from that village to Franklin. This calculation does not include those in the borough of Franklin.

TREMENDOUS FLOW OF OIL.—The most extraordinary of the many extraordinary oil wells discovered in Pennsylvania lately we read of in the Erie *Observer*. The well was opened at Tideout, Erie county, on the 10th instant, by Rev. Mr. Hequembourg. The *Observer* says: "At a depth of 175 feet oil was struck, and it has since been coming to the surface in a voluntary flow of one barrel per minute! Think of this ye who are anxious to get rich. At $15 per barrel, a low estimate, this well yields its owner $20,160 per day. We are assured by parties who have visited the well that there is no humbug in the statement; that it positively yields its barrel per minute!"

SOUTH BOSTON GAS-LIGHT COMPANY.—The South Boston Gas-Light Company have voted to increase their capital stock $15,000, the money thus raised to be applied to constructing a new tank and gas-holder, and other necessary improvements. Here is a chance for our advertisers.

STATEN ISLAND, N. Y.—This company have declared a scrip dividend of ten per cent. They have reduced the price of gas from $4 to $3 50, and have extended their pipes nearly twenty miles through the villages on the island.

SAINT LOUIS, MO.—These works were built by Mr. Thomas Pratt, now engineer of the company. We may in a future number, give a brief history of these works, which would interest some of our readers. Until recently, iron retorts were used solely, from the foundry of Graham & Newman; but the introduction of clay retorts has secured their partial use here, as well as in many other works in the country. Messrs. Elliman Brothers' retorts have been adopted, and found to work so well that iron will soon be abandoned. The station meter is from Colton. Code & Co. Four gas-holders are used, two being 50 × 20, one 100 × 35, and one 140 × 70 feet. The largest is telescopic, from Starr's factory at Camden, N. J. This company use a photometer, and one of Addison Smith's Exhausters. Length of mains about 50 miles, ranging from 3 to 16 inches diameter. Pittsburg coal is used, costing 27 cents per 76 lb., and the meter rent ranges from 25 cents to $1 a month.

WATERBURY, CT.—Built by Dungan, Cartwright & Co. Use R. A. Brick's iron retorts, Morris Tasker & Co.'s gas-holder. Gratz's meters, and English coal at $9 per ton. Length of mains, 6 miles, from two to six inches diameter. Charge nothing for meters. Have declared no dividend as yet, we believe.

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Shewing where Gas-Works and Water-Works are Wanted.

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62 Counties, 854 Towns, 4 Gas-Works, and 2 Water-Works.

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Hartwood,
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Milton,
Mulberry,
Prattville,
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Blakely, (c. h.,)
Dannelley's Mills,
Honey Cut,
Stockton,
Tensaw.

Barbour County.

Adkinson's,
Buck Branch,
Buford,
Bushville,
Choctawhatchie,
Clayton (c. h.,)
Cowikee,
Eufaula,
Fort Browder,
Fort Williams,
Glennville,
Jernigan,
Kings,
Louisville,
Midway,
Mount Andrew,
New Topia,
Renoldsville,
Texasville,
White Oak Springs.

Bibb County.

Affonee,
Caudle's Shop,
Centreville (c. h.)
Maplesville,
Mars,
Randolph,
Scottsville,
Six Mile.

Blount County.

Blount Spring,
Blountsville, (c. h.,)
Brookaville,
Campbell's Store,
Chepultepec,
Hanna's,
Little Warrior,
Mount Alvis,
Murphree's Valley,
Ogee,
Sapp's Cross Roads,
Summit.
Village Springs,
Vioty,
Walnut Grove.

Butler County.

Armadillo,
Butler Spring,
Davidville,
Dawson,
Dead Fall,
Didaske,
East Georgia,
Friendship,
Georgiana,
Greenville, (c. h.,)
Honoroville,
Jackson's Mills,
Kirkville,
Long Creek,
Manningham,
Millville,
Monterey,
Oaky Streak,
Pigeon Creek,
Rainesville,
Sal Soda.
South Butler,
Starlington,
Three Runs,
Toluca.

Calhoun County.

Abernethy,
Alexandria,
Cainland,
Corn Grove,
Cove Creek,
Cross Plains,
Fair Play,
Jacksonville (c. h.,)
Kemp's Creek,
Ladiga,
Lead Mines,
Loydville,
Middleton,
Morrisville,
Mount Polk,
Narrow Valley,
New Bethel,
Oak Level,
Oxford,
Palestine,
Peak's Hill,
Rabbittown,
Reavesville,
Ripley,
Rosewood,
Shoal Creek,
Sulphur Springs,
Ten Islands,
Watt's Creek,
Wehoga,
White Plains,

Chambers County.

Bethlehem,
Beulah,
Chambers, C. H.
Cusseta,
Fredonia,
Hickory Flat,
Randall's Cross Roads,
Milltown,
Mount Hickory,
Mount Jefferson,
New Harmony,
Oak Bowery,
Osanippa,
Waverly.

Cherokee County.

Ball Play,
Blue Pond,
Cedar Bluff,
Cedar Springs,
Centre,
Cobb's Mills,
Coloma,
Davis Cross Roads,
Gadsden,
Gayleaville,
Gnatsville,
Goshen,
Hannegan,
Hoke's Bluffs,
Howel's Cross Roads,
King's Hill,
Kirk's Grove,
Leesburgh,
Little River,
Occola,
Pleasant Gap,
Ringgold,
Rio Grande,
Sand Rock,
Sterling,
Spring Garden,
Tranquility,
Turkeytown,
Water Cure.

Choctaw County.

Barrytan,
Black Creek,
Bladen Springs,
Bogueloosa,
Butler (c. h.,)
Desoboville,
Hurricane Creek,
Isney,
Mount Sterling,
Nicholson's Store,
Oaktuppa,
Old Washington, C.H.,
Puscusa,
Pushmataha,
Red Creek,
Tompkinsville,
Williams' Cross Roads
Yancey.

Clark County.

Air Mount,
Bashi,
Choctaw Corner,
Coffeeville,
Dead Level.
Gainestown,
Grove Hill,
Jackson,
Morvin,
Saint Paul,
Suggsville,

Coffee County.

Busboeville,
Cane Break,
Coffee Corner,
Elba,
Geneva,
Indigo Head,
Oldtown,
Perdue,
Wellborn, (c. h.,)

Conecuh County.

Belleville,
Brooklyn,
Commerce,
Evergreen,
Fort Crawford,
Jamestown,
Lewis' Station,
Nathansville,
Orison,
Rural Hill,
Sepulga,
Sparta, (c. h.)

Coosa County.

Adams' Store,
Bradford,
Buyckaville,
Central Institute,
Coosa Valley,
Equality,
Good Water,
Hanover,
Marble Valley,
Mount Olive,
Nixburg,
Rockford, (c. h.,)
Soocopatoy,
Traveller's Rest,
Weoguf ka,
Wetumpka.

Covington County.

Andalusia, (c. h.,)
Conecuh River,
Leon,
Loango,
Read Level,
Rose Hill,
Westover,
Williams' Mill.

Dale County.

Barnes' Cross Roads,
Beaver Creek,
Big Creek,
Clopton,
Daleville,
Dothan,
Goline,
Haw Ridge,
High Bluff,
High Fall,
Newton, (c. h.,)
Ozark,
Pondtown,
Rocky Head,
Skipperville,
Summer Hill,
Sylvan Grove,
Westville.

Dallas County.

Bellevue,
Burnsville,
Cahaba (c. h.,)
Cambridge,
Carlowville,
Elm Bluff,
Forix,
Liberty Hill,
Moseley's Grove,
Orrville,
Pleasant Hill,
Portland,
Richmond,
Selma,
Summerfield,
Woodlawn.

De Kalb County.

Annawalka,
Atwood,
Corville,
Deck Spring,
Greenwood,
Head Spring,
Hendricksville,
Laurel Creek,
Lebanon (c. h.,)
McCammac,
North Head,
Pierceville,
Porterville,
Rastingsville, (c. h.,)
Reese's Mills,
Reubensville.
Sand Mountain,
Valley Head,
Van Buren,
Worth.

Fayette County.

Asbury,
Beaverdale,
Big Pond,
Brown.
Cave Spring,
Cordova,
Davis' Creek,
Fayette, C. H.,
Folia,
Handy,
Hester's,
Hill,
Military Springs,
Millport,
Mud Creek,
New River,
Newtonville,
Olinda,
Pilgrim's Rest,
Sheffield,
Yellow Creek.

Franklin County.

Allsboro',
Barton,
Blue Lick,
Burleson,
Cherokee,
Chickasaw,
Dickson,
Frankfort,
La Grange,
Salt Spring,
Nauvoo,
Newburgh,
Pleasant Site,
Rock Creek.
Russellville (c. h.,)
South Florence,
Spruce Pine,
Tuscumbia, (c. h.,)
Waco.

Greene County.

Boligee,
Clinton,
Eutaw,
Forkland,
Greenboro,
Harrison,
Havanna,
Hollow Square,
Hopewell,
Knoxville,
Mount Hebron,
Newbern,
New Prospect,
Pleasant Ridge,
Springfield,
Union,
Welton.

Hancock County.

Clear Creek Falls,
Houston,
Littlesville.

Henry County.

Abbeville,
Columbia,
Cureton's Bridge,
Egypt,
Flag Pond,
Franklin,
Hilliardsville,
Lawrenceville,
Mercy Bay,
Open Pond,
Otho,
Shorterville.

Jackson County.

Bellefonte, (c. h.,
Big Coon,
Bolivar,
Bridgeport,
Dodsonville,
Estill's Fork,
Langston,
Larkinsville,
Long Island,
Lyonville,
Park's Store,
Princeton,
Redman,
Rocky Spring,
Rustic Bower,
Santa,
Scott's Mills,
Stevenson,
Straight Fork,
Trenton.
Woodville, (c. h.)

Jefferson County.

Cedar Grove,
Chester,
Elyton, (c. h.,)
Jonesboro',
Mount Pinson,
Nebo,
Oregon,
Rockville,
Taylor's,
Truss,
Vinesville,
Wardrop's Mills.

Lauderdale County.

Bailey's Springs,
Centre Star,
Florence, (c. h.,)
Gravelly Spring,
Green Hill,
Lexington,
Little Cypress,
Masonville,
Oakland,
Rogersville,
Waterloo,
Westmorelandville.

Lawrence County.

Avoca,
Brickville,
Camp Spring,
Camp Spring,
Concord,
Courtland,
Dry Creek,
Kinlock,
Landersville,
Leighton,
Marietta,
Moulton, (c. h.,)
Mountain Home,
Mount Hope,
Oakville,
Town Creek.

Limestone County.

Athens, (c. h.,)
Centre Hill,
Gilbertsboro',
Good Spring,
Lucky Hit,
Mooresville,
Mount Roszell,
Pettusville,
Shoal Ford.

Lowndes County.

Benton,
Bragg's,
Farmersville,
Fort Deposit,
Hayneville,
Helicon,
Letohatchee,
Lowndesboro',
Manak,
Mount Willing,
Panola,
Sandy Ridge,
Steep Creek.

Macon County.

Aberfoil,
Auburn,
Chunenggee,
Cotton Valley,
Cross Keys,
Cubehatchie,
Dick's Creek,
Enon,
Fort Decatur,
Guerryton,
Hardaway,
Hernando,
La Place,
Loachapoka,
Lockland,
Magnolia,
New Potosi,
Notasulga,
Person's,
Ridge Grove,
Society Hill,
Suspension,
Tuskegee, (c. h.,)
Union Springs,
Uphaupee,
Warrior Stand.

Madison County.

Berkley,
Haden's,
Hayes' Store,
Huntsville, (c. h.,)
Madison Cross Roads,
Madison Station,
Maysville,
Meridianville,
New Hope,
New Market,
Owen,s Cross Roads,
Triana,
Whitesburg.

Marengo County.

Clay Hill,
Dayton,
Demopolis,
Dixon's Mills,
Hampton,
Jefferson,
Linden, (c. h.,)
McKinley,
Macon,
Nanafalia,
Pineville,
Shiloh,
Spring Hill,
Sweet Water.

Marion County.

Abeda,
Allen's Factory,
Alston's Store,
Barnesville,
Beavertown,
Bexar,
Bigalow,
Chalk Bluff,
County Line,
Detroit,
Hackleburgh,
Haleys,
Moscow,
Palo,
Pikeville, (c. h.,)
Toll Gate.

Marshall County.

Aurora,
Big Spring,
Claysville,
Cottonville,
Guntersville,
Henrysville,
Hillian's Store,
Kennamer,
McCloskey's,
Meltonsville,
Mount High,
Oleander,
Red Hill,
Sydney,
Warrenton, (c. h.,)
Zachary.

Mobile County.

Citronelle,
Miller Creek,
Mobile, (c. h.,)
Mount Vernon,
Seal's Precinct,
Whistler.

Monroe County.

Bell's Landing,
Buena Vista,
Burnt Corn,
Claiborne, (c. h.)
Clauselville,
Cokerville,
Old Texas,
River Ridge.

Montgomery County.

Arcadia,
Argus,
Catoma,
Hickory Grove,
Line Creek,
Montgomery, (c. h.,)
Mount Meigga,
Oak Grove,
Oakley,
Pine Level,
Pintiala,
Ramer,
Sharpesville,
Snowdoun,
Strata.

Morgan County.

Apple Grove,
Basham's Gap,
Blue Spring,
Cedar Plains,
Danville,
Decatur,
Flint River,
Gandy's Cove,
Ivy Bluff,
Lacey's Spring,
Somerville,
Valhermoso Springs.

Perry County.

Brush Creek,
Bucksnort,
Chesnut Hill,
Five Mile,
Ford's Mill,
Hambugh,
Jericho,
Marion,
Morgan Spring,
Oakmulga,
Perryville,
Pinetucky,
Plantersville,
Radfordsville,
Unionstown.

Pickens County.

Antioch,
Bridgeville,
Carrollton, (c. h.,)
Cochran's Mills,
Fairfield,
Gordo,
Hinton Grove,
Mantua,
Memphis,
Olney,
Palmetto.
Pickensville,
Pleasant Grove,
Providence,
Raleigh,
Reform,
Vienna.
Yorkville.

Pike County.

Aborvitæ,
Bibb,
Bruceville,
Brundige,
Buck Horn,
China Grove,
Farriorville,
Gainer's Store,
Hallsville,
Indian Creek,
Little Oak,
Milo,
Monticello, (c. h.,)
Mount Hilliard,
New Providence,
Oluste Creek,
Orion,
Pea River,
Perote,
Pine Grove,
Troy, (c. h.,)
Wesley Chapel,
White Water.

Randolph County.

Almond,
Arbacoochee,
Buchanan,
County Line,
Delta,
Dowdell,
Eastville,
Fish Head,
Gold Ridge,
Haywood,
Hebron,
Ingram,
Lamar,
Louina,
Mellow Valley,
Milner,
Molino,
Oakfusky,
Roanoke,
Rockdale,
Rock Mills,
Warren,
Weedowee,
Wehadkee,
Wesobulga,
Winston.

Russell County.

Colbert,
Crawford, (c. h.,)
Dover,
Girard,
Hatchechubbee,
Lamington,
Mechanicsville,
Opelika,
Oswiche,
Salem.
Sand Fort,
Seale's Station,
Uchee,
Vilula,
Waccoochee,
Watoola,
Yongsborough,

Saint Clair County.

Ashville, (c. h.,)
Beaver Valley,
Beebe Springs,
Bennetsville,
Blairsville,
Branchville,
Broken Arrow,
Coosa Valley,
Cropwell,
Greensport,
Kelly's Creek,
Mount Niles,
Round Pond,
Springville,
Trout Creek,
Wolf Creek.

Shelby County.

Bridgeton,
Columbiana, (c. h.,)
Harpersville,
Highland,
Hillsboro',
Montevallo,
Mullins,
Nelson,
Shelby Springs,
Sterrett,
Wilsonville,
Woodsboro'.

Sumter County.

Anvil,
Belmont,
Bluffport,
Brewersville,
Gainsville,
Gaston,
Intercourse,
Jones' Bluff,
Livingston, (c. h.,)
Payneville,
Rosserville,
Sumterville,
Sydenham,
Warsaw.

Talladega County.

Alpine,
Bluff Spring,
Bowdon,
Brownsville,
Chandler's Spring,
Childersburg,
Chinnibee,
Coleta,
Conchardee,
Court Hill,
Curry,
Dido,
East Boga,
Fayetteville,
Fife,
Flat Rock,
Hatcher's Rock,
Hillabee,
Iron Works,
Kelly's Springs,
Kimulga,
Lincoln,
Mardisville,
Middle Ridge,
Mountain,
Pinckneyville,
Pine Flat.
Silver Run,
Sylacauga,
Talladega, (c. h.,)
Weewokaville,
Winterboro

Tallapoosa County.

Beckettsville,
Bulger's Mills,
Camp Hill,
Chanahachee,
Chapman's Ford,
Dadeville, (c. h.,)
Daviston,
De Soto,
Budleyville,
Emuckfaw,
Fish Pond,
Goldville,
Horse Shoe Bend,
Island Home,
Jackson's Camp,
Kowaliga,
New Site,
Realtown,
Souchahatchee,
Stow's Ferry,
Tallassee,
Tehopeka,
Wind Creek,
Youngsville.

Tuskaloosa County.

Addison,
Blocker's,
Carthage,
Cushing.
Fernvale,
Foster's,
Jena,
McConnell's,
McMath's,
Moore's Bridge,
New Lexington,
Northport,
North River,
Oregonia,
Plum,
Romulus,
Sipsey Turnpike,
Trion,
Tuscaloosa, (c. h.,)
Woodstock.

Walker County.

Arkadelphia,
Bartonville,
Blackwater,
Democrat,
Eldridge,
Fairview,
Gap,
Hanby's Mills,
Holly Grove,
Jasper,
Kansas,
Thornhill,
York.

Washington County.

Escatawpa,
Mackintosh Bluff,
New Wakefield,
Pleasant Valley,
Saint Stephens.

Wilcox County.

Allenton,
Bethel,
Camden,
Clifton,
Creagh's Hill,
Fatama,
Lilly's Store,
Lower Peach Tree,
Pine Apple,
Pine Hill,
Prairie Bluff,
Rehoboth,
Sebastopol,
Snow Hill,
Wilcox Springs.

LONGEVITY OF SCIENTIFIC MEN.—An American who was present at a late meeting of the British Scientific Association in Oxford, England, thus writes in relation to the well-preserved physical condition of the members of that learned body: "In looking over the imposing assembly, I have been struck with the large number of well-preserved, robust, elderly men present. The physical constitution of Englishmen seems to embody a larger amount of vital energy than we are accustomed to witness among our own countrymen. Professor Sedgwick of Cambridge, at the age of seventy-six, presides for five or six hours in succession in the geological section, and enters with zest into all the debates. Sir Benjamin Brodie, still older, as I judge, speaks with keen discrimination and undiminished vigor. Dr. Hicks, the eminent orientalist, equal in years to either, warms into enthusiasm as he produces from the clay slabs of Nineveh, now deposited in the British Museum, observations on the planet Venus, made in the seventh century before Christ. While Sir David Brewster, wanting one only of four score years, walks with an elastic step, and almost every day presents a paper upon some branch of his favorite science of optics, in which he has long been eminent for his experimental researches. And these are but a few of the veterans in British science, who bring their contributions to this association."

Gas-men, too, are said to live for ever. They certainly never cease to "blow"—until they sell out.

WATER WORKS AT PHILADELPHIA.

Several of our contemporaries have recently called public attention to the pressing necessity which exists for an enlargement of our Water-Works; but while they have brought forward numerous and convincing arguments, we think that the bearing of the question upon our manufacturing prosperity has hardly been accorded the prominence to which it is entitled. Facilities for obtaining ch ap coal and iron have been so generally regarded as the main source of industrial pre-eminence, and we have considered an unlimited supply of water as so much a matter of course in Philadelphia, that we are apt to forget that water is as essential to the development of steam power as fuel itself; while in many delicate processes abundance of pure water is as necessary as cheap iron in some of the heavier branches of manufactures. In a factory, indeed, scarcely anything can be of more importance than an unfailing and reliable supply, that shall cause no unnecessary risk of explosion from unexpected stoppages and fitful interruptions in the current which feeds the boilers.

The magnitude of the interests involved, even at the present time, is shown by the fact that no less than four hundred and thirty-eight steam engines are now supplied by our Water Works, and as we confidently look forward to the period when Philadelphia is to rank as one of the great manufacturing cities of the world, it behoves us to provide in time for a vast extension of our steam power. The steam power of Manchester is equivalent to nearly half a million horses, while our 438 engines represent an aggregate of only 6,763 horses—an instructive comparison, from which we may learn how little we yet have accomplished, and how immense is the demand for which we must be prepared to provide, if we expect to realize our anticipations of a prosperous future.

It is hardly worth while to enter upon any elaborate demonstration of what we believe is universally recognized—the incapacity of our Water-Works to supply the present wants of the city. It therefore requires no special degree of foresight to predict that this cause must very shortly cripple to a serious extent the progress of our industrial expansion, if it has not already commenced to exercise a deleterious influence over it. When important establishments are compelled to give up the city water and provide independently for themselves, we may reasonably conclude that numerous others of less extent are suffering much inconvenience, without having the means of relief by which heavy capital is able to overcome municipal shortcomings. What, then, are the inducements held out for fresh enterprises, when those already in existence are so scantily provided for? It so happens that the two sections of our city best adapted for factories are those which have especial causes of complaint on this score. The Nineteenth Ward, with its splendid river front, and coal poured in upon it from both the Reading Road and the Lehigh Canal, should become a dense hive of industry; but its water supply is deficient, and the scourings of the city, swept by the tide past the supply pipe of its works, at times contaminate the water to a degree which renders it unfit for any purpose. Accordingly, there are in the Ward but twenty-eight engines supplied by the city, yielding a revenue of only $3,064. The case of the Twenty-fourth Ward is similar, offering a wide area and singular advantages for establishments of every description, neutralized by this one drawback. We may particularly notice the space between the Darby road and the Schuylkill, south of Chestnut street, as combining facilities not elsewhere to be met for mills of all kinds. The river affords it anthracite coal and easy transportation to all parts of the country; the Pennsylvania Railroad will shortly traverse its whole extent, bringing to it, at a minimum cost, iron, wool, cotton, grain, lumber, bituminous coal, &c.; while the Baltimore Central will ere long open for it another avenue for receipt and shipment, from and to the South and Southwest; yet, with all these advantages, natural and artificial, it is only farm land, although the city's interest in the Almshouse property would in itself more than repay the outlay necessary to invite improvements towards it. When, therefore, we find that throughout a ward so extensive and so favored, there are but twenty-one engines supplied from the West Philadelphia Works, paying a revenue of but $1,793, the cause is to be sought in the fact that those works have no reservoir, and therefore that the water is liable to be cut off at any moment, without warning, whenever any trifling accident happens to the machinery, which is habitually overdriven.

It is to districts such as these, where ground is cheap, raw material readily attainable, and access to the commercial centres easy, that we must look for whatever expansion our manufacturing interest is to receive; and yet, while we talk loudly of the present, and indulge in glowing anticipations of our future greatness, we neglect to provide one of the essential pre-requisites, without which all other advantages amount to little. A few hundred thousand dollars only are wanted to enlarge the pumping and distributing capacity of the works, so as to furnish, for years to come, an unlimited supply for all the increased wants that unbounded property can create; and yet we pause and debate, year after year, over this trifling expenditure, which, in itself, would be speedily repaid by the augmented revenue of the department. Such is not the spirit which has built up the great cities of the past; and still less will the present age of progress admit of policy so narrow. Keen sighted and eager rivals are around us, ready to seize the prize which we timidly refuse to grasp; and we cannot afford, by suicidal delay, to throw away advantages bestowed upon us by nature to an extent which should distance competition.—*Philadelphia Evening Bulletin.*

CORRESPONDENCE.

U. S. Consulate, Nassau, N. P., Sept. 25, 1860.

To the Editor of the American Gas-Light Journal.

By the steamer last week I received your letter, of August 1st on the subject of gas light, &c., and a copy of the Journal.

I hasten, and with pleasure, to give you the information desired—information which I fear can be of little service to you.

There is no company on this island of New Providence for furnishing either gas or water. Probably neither enterprise would pay, as the population of the town is less than 10,000, and the residences much scattered of those who could afford to encourage these improvements.

A serious obstacle to the introduction of gas-light would be found in cutting the rock which everywhere covers the surface of the island. Though the stone it cut with comparative ease, it must necessarily add considerably to the expense.

The illuminating materials in use are candles and oils, with a small quantity of camphene and similar burning fluids; but I presume the largest consumption is of cheap candles. These articles are almost exclusively imported from the United States.

There were imported from the United States into this colony (the Bahamas), during the year 1858, 92,320 lbs. of candles, valued at $12,840, while all the oils imported from the United States in the same year, including those for paint and other purposes, fell short of 7,000 gallons, and were valued at the Custom House at $7,600. About three years since I sent to New York for some Kerosene oil and lamps, and at my house lighted the first seen here. This oil is now in common use, and is sold at $1 50 to $2 per gallon.

There are no water works. Supplies are necessarily derived from wells, and the tanks which collect rain water. There is not a stream of running water on the island.

Neither the extent of the works for sewerage, nor the requirements of the place in this particular, are sufficient to require comment.—With great respect,

Very truly yours,

I. J. Merritt, U. S. Consul.

U. S. Consulate Metamoras, Mexico, Sept. 22, 1860.

To the Editor of the American Gas-Light Journal:

Your letter dated the 1st August, franked by the State Department, has been duly received, and I proceed to answer your inquiries.

The city of Metamoras contains about 12 000 inhabitants. It is not lighted with gas, but by about 15 or 20 lamps illuminated by common oil. There are no water works; the reservoir is the Rio Grande river, from which the water is dragged by men in barrels of about 40 gallons, and costs at present 12½ cents per gallon. The city being a perfect level there is no sewerage, the water being absorbed and evaporated from the streets.

I am sorry it is not in my power to communicate anything interesting, for the people here will not pay for anything like improvements. If they could get them free of cost, perhaps they might condescend to permit them to be made.—I am, very respectfully,

Your obedient servant,

R. Fitzpatrick,

U. S. Consul.

ANSWERS TO CORRESPONDENTS.

L. S. A., of Pa.—*The California Gas Company is a fossil remains of a speculator named Prentice, who was delivered of it in 1851, having drawn in a few respectable men to make the stock palatable in the market. The enterprise died in childbirth, having, as far as we can learn, never drawn its first breath. Don't touch the stock, nor anything pertaining to it, with a forty-foot pole.*

D. W., of Md.—*The gas-meter business is open to you as to the rest of mankind. It has been hitherto monopolized, as you say, by one or two manufacturers, who well deserve the large fortunes they have earned; but having feathered their nests, they will gracefully admit others into the field. which is becoming enlarged daily. You will be obliged to produce superior instruments, however, to cope with them.*

L. L. S., of Mass.—*The question of the presence of the bisulphide of carbon in coal gas is being agitated, and we shall have something to say on this subject in our next. The Astor Library has been closed in the evenings, in consequence of Dr. Cogswell's opinion that the books would be injured by this agent. It is said that the injury to works of art in the British Museum was ascertained to be so extensive as to justify its being closed at dark, which is now done. But then, London gas is notoriously more impure than ours.*

Capital, of Mo.—*The stock you speak of is in the market, but as to value we know not. It can be had in a trade for real estate, and probably a little can be spared to "particular friends" at par, or a little under—say down to fifty per cent. But this, mind you, is only to "particular friends" If you are not one of them, you may as well not claim it on that score or any other.*

F. & O. of N. Y.—*We can say nothing else of the Fifth Ward Gas Company of Milwaukie Wis., than that, if they wish to keep dark about their affairs, we take it for granted their stock is worthless. Don't touch it till we report further. Leave their bonds alone, too.*

D. L., of N. Y.—*Your Patent traps for Inventors are capital. We will publish them by-and-bye.*

New Method of Procuring Gas from Wood.—The N. Y. *Sun* says: We hae the pleasure of witnessing the process of producing gas from wood. The proprietors of the new gas are Schmidt' Brothers, (Germans), and the place of exhibition is at the corner of 47th street and Broadway. The gas is a German invention, and was suggested some eight years since by Professor Max Pettenkoffer, of Munich. The original material in the production of this gas was a vegetable fibre, which was discovered to throw out a brilliant flame. Subsequently wood was tried, with most decided success, and in the face of a state monopoly, the new invention has already worked its way into use in many of the leading cities of Germany.

It is represented that one cord of wood will produce 20,000 feet of gas, which, at New York prices is worth $50, besides a residuum of 32 bushels of charcoal, worth $16, with other useful elements extracted by the process, making the total product of a cord of wood as estimated over $70.

The light, so far as we could judge from the exhibition yesterday, is remarkably fine, and free from the noxious products of ordinary coal gas burning. The proprietors design soon to test their article in some of our principal hotels and public buildings. The cost of the process is stated as follows: One cord of wood, $7; wages, $3; lime for purifying, $1; fuel, $2 50. Total, $13 50.

The editor of the *Sun* doesn't read the Journal.—Ed.

Water Gas Company in Lockport, N. Y.—The Lockport Daily *Union* says that the organization of a new gas company in that village has been completed and the stock subscribed. The company have purchased ground near the old cotton Factory, in the lower village, and will commence work as soon as the permission of the Trustees can be obtained to lay down the pipes. The company propose to manufacture water gas, which has been successfully introduced into the Girard Houses Philadelphia. The *Union* says it is a pleasanter and much cheaper light than that made from coal or rosin.

New Gas-Works under Way.—The new gas-works at Monroe, Michigan, are in a state of forwardness, under the contract with S. S. Battin, of Newark. N. J. The City Council do not seem disposed to grant public lamps, whereat the editor of the Monroe *Commercial* is dissatisfied, and proposes that a dozen be planted as a beginning. We think Monroe can afford a dozen lamps. Try.

New gas-works are also going up at Coldwater, Mich. A company has been formed for the purpose of manufacturing gas in that village, for the purpose of lighting the streets and buildings. The stock has all been taken, and Mr. A. W. Parkhurst, the principal stockholder, has gone to Philadelphia for the purpose of buying the pipes and other necessary articles. The company is to be called the Coldwater Gas-Light Company, and has the exclusive privilege of manufacturing gas in the place for the next twenty-five years. We understand they have contracted for the brick necessary for their works, and expect to have them in operation by the time winter sets in. The works are to be located on Chicago street, west of Hanchett street, where the old ball-alley used to stand.

Gas Explosion—Six Persons Injured.—About nine o'clock last Thursday night an explosion of escaped gas occurred in the unfinished house No. 155 East Twenty-ninth street, seriously injuring six persons, consituting the family of David Fusch, who lived in the second story, and were the sole occupants of the building. Some gas-fitters had been at work in the lower part of the building, and had left the gas turned on in such a way that a small room in the second story was filled with gas. During the evening a brother of David happened to open the door of that room, and the gas there confined coming in contact with the lamp, exploded with a loud report, shivering the doors and windows in the lower part of the house, ripping up floors and demolishing ceilings and stairways. The youngest child was so badly burned that his life is despaired of, and all the rest of the family were scorched and blistered upon the exposed portions of their bodies. A neighbor's child playing in the yard was thrown violently against a fence but not seriously hurt. The injured family was removed to the 21st ward station house, and a physician called to attend their injuries. It is surprising that the whole family were not killed.

Worcester, Mass.—Works built by Blake & Darracott, with W. A. Wheeler's iron retorts. Use 9-10ths Pictou, 1-10th Cannel coal—former costing $6 50 per ton, latter $13 to $16. Down's photometer, but no exhauster. No meter rent charged. To this company the gas interest of the country is indebted for much information obtained from various works, and published in a supplement to this Journal last year.

Peoria, Ill.—Coal works built by Thomas Pratt of St. Louis. Iron retorts made by Graham & Newman. Meters from Code, Hopper & Gratz's. About 6 miles of mains are laid, ranging from 3 to 6 inches diameter. Use Peoria coal at $3 per 2,000 lb.

Owego, N. Y.—Works built by Deily of Philadelphia, with J. K. Brick & Co.'s clay retorts, Merrick & Sons' and Morris Tasker & Co.'s iron retorts, and Down's meters. Length of mains three miles, from two to six inches diameter. Fry Erie coal; cost $6 70 per 2000 lbs. Gas made in 1859, about 2,250,000 cubic feet. No charge for meters when gas bills amount to $12 per annum; if less, 25 cents per month.

THE AMERICAN GAS-LIGHT JOURNAL is published on the 1st and 15th of every month, and is specially devoted to

LIGHT, HEAT, WATER-SUPPLY, AND SEWERAGE.

Its purpose is to ascertain and make known all new discoveries in the science and economical application of LIGHT, and promote thereby the interests of companies and consumers; to encourage and aid the introduction of PURE WATER from Lakes and Rivers into Towns and Cities, and to improve the system of SEWERAGE, VENTILATION, and DRAINAGE everywhere.

Incidentally with these results, the business of all Gas and Steam Fitters and Plumbers; the erection of Gas-Works and Water-Works; the consumption of Coals, the manufacture and consumption of Coal-Oils, the manufacture of Gas-Pipe, Water-Pipe, Steam-Pipe, Gas Fixtures, Gas-Meters, Water-Meters, Retorts of iron and clay, and their varied apparatus; of Drain Pipes, Ventilating, Heating and Dredging Machines, will be increased immeasurably.

THERE ARE 20,000 CITIES AND TOWNS IN THE UNITED STATES, CAPABLE OF SUPPORTING GAS-WORKS, WHILE THERE ARE NOT 400 GAS-WORKS IN OPERATION IN THE WHOLE COUNTRY!!!

New works are now springing up, however, every week, and they will continue to increase rapidly hereafter.

Advertisers of Gas and Coal Oil, Water, Steam, Sewerage and Ventilating apparatus, and of Iron and Brass manufactures, &c., will find the AMERICAN GAS-LIGHT JOURNAL the most desirable and efficient medium of any in the United States, going, as it does, direct to the parties interested in those subjects.

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THE
AMERICAN GAS-LIGHT JOURNAL.
ISSUED SEMI-MONTHLY.

MONDAY, OCTOBER 15, 1860.

We have on several recent occasions directed special attention to the mischievous effects of sulphur when present in coal-gas. Our remarks have elicited an interesting communication from CHARLES ROOME, Esq., the President of the Manhattan Gas Company in this city. From this letter which appears in another column, we find our anticipations fully realized as to the comparative purity of the gas supplied in this city, and on another occasion we may have something to say relative to the probable causes of our superiority in this respect over some of the enterprising, prosperous and ably conducted gas companies of Great Britain. It is sufficient, however, for the present purposes to point out the fact that the gas furnished by our city companies is so free from those corroding, pernicious compounds to which we have referred, that there is no longer any justifiable reason for picture galleries and public libraries being closed during the evening hours, on the plea that paintings and other valuable objects exposed to the action of the products of combustion would be injured by their destructive influence.

Considerable discussion has recently been elicited in England respecting the corrosion of iron mains, from various causes, and especially from gas leakage. A British medical journal, of high reputation, has endorsed the statements of the daily press, adding thereto several gratuitous, and, as it appears to us, unjustifiable inferences. Among the mischievous results so graphically portrayed, the whole blame of which is unhesitatingly charged on the gas companies, the destruction of the water-mains occupies a prominent place. The great London water companies naturally took the alarm. By direction of the New-River Company, Mr. Thomas Spencer has just prepared a report, the principles laid down in which confirm the opinions held by the most eminent American authorities whom we have consulted on the subject.

First, it is stated that cast-iron piping, under ordinary circumstances, will no doubt continue sound for eighty or a hundred years.

Its surface, indeed, soon coats itself with a thin layer of oxyde, after which a second and a third layer are formed by slow, and ever slower increment. For each of these envelopes forms a partial barrier to the formation of the next. And at length, by their accumulating aggregation and increased protecting influence, an incrustation is formed which surrounds the pipe, prevents the passage of moisture, and preserves the surface from further chemical changes. Such is the ordinary process when the earth in which the pipes repose receives moisture, moderate in amount, and derived from rain alone.

Secondly, it is a well-established fact that improved paving and drainage among their other economical advantages, possess that of prolonging the duration and preserving the integrity of street piping by the impediments they offer to the excessive saturation of the soil, for experience shows that cast iron in contact with impure water from street gutters corrodes sooner than if moistened by rain-water alone. The activity of the corroding processes varies in different cases, being dependant on the amount and the chemical nature of the substances held in solution by the water. In the streets —which, like many we could point out within a short radius of our City Hall, are badly cleaned and worse drained, densely populated and decimated by disease, the destruction of the pipes will go on with much more activity than in streets which, being well-kept and thoroughly drained, are usually dry except in wet weather.

Thirdly, the durability of the pipes is obviously dependant on the nature of the earth which surrounds them. Thus if they are laid upon a clay bottom, they corrode more rapidly than if they repose on a porous bed, for the water percolating from above, or derived from leakage, is arrested by the clay, and is retained around the pipe. In London and other cities, where gypsum is contained in the soil, it is held in solution by the water thus accumulating, and the resulting corrosion is extremely active around the lead joints of the pipes, as a galvanic action is set up between the lead and the iron, the water charged with gypsum being the conducting medium. Hence it is daily observed that the lower portion of the socket of the pipe is, under such circumstances, decomposed, and converted into a species of plumbago. A similar action takes place as often as cinders or any other substance capable of acting with contiguous substances as negative electric element when brought into contact with the iron or positive element. It is an important fact that corrosive destruction of this character is ordinarily sure to spread. For if the primitive cause be removed, the plumbago which has been generated supplies its place, and keeps up the galvanic decomposition by acting as the negative element to the surrounding metal. The "honeycomb" defects in mains are often due to action such as we have described, though they are not usually attributed to it.

The leakage from gas-mains has, in certain kinds of soil, an intensely destructive effect upon cast iron, for it imparts to the surrounding moisture a highly alkaline character, so that pipes in contact with it are attacked with more rapidity and force than where earthy matter alone is held in solution. Moreover, the presence of this alkaline moisture prevents the oxydation of the exterior surface of the pipes, and thus robs them of the incrustation that would otherwise defend their substance and protect their integrity. Many different methods have been proposed for protecting cast-fron pipes against external corrosion. Varnishes of different degrees of protective power have been used, but except where the surrounding earth is free from the conditions favorable to corrosion, few possess much value; and Mr. SPENCER states what we believe is confirmed by universal experience, that no varnish hitherto discovered is capable of protecting, even for a short time, cast-iron pipes laid in moist earth, saturated with permanent gas-leakage. On the other hand, a firm incrustation of natural oxide, which is almost the only protection relied on at present by our most experienced American companies, is probably far superior to any kind of varnish that has ever been experimented with.

An impartial examination of the various processes for the protection of gas and water pipes from corrosion, would, in competent hands, form a very interesting and valuable work. We shall be glad to hear the results of such experiments as our readers may have instituted for the preservation of cast-iron pipes. Although in New-York and most of our large cities the chemical nature of the soil is not so favorable to corrosive action as in London, and in many English manufacturing towns, still the subject is far from unimportant, and will fully repay investigation.

In an early number we expect to have some interesting facts to communicate relative to the advantages of Cement and Stone-ware Pipes, which are extensively used for sewerage and water supply in this country and elsewhere.

The water-gas controversy is still kept up at Philadelphia, without any very obvious prospect of an early and amicable settlement. As a contribution to the history of the progress of this department of gas-light enterprise, we print elsewhere an account of the water-gas works at Narbonne, never before published in this country, and translated from our well-informed contemporary the *Journal de l'Eclairage au Gaz.*

WHERE GAS-WORKS ARE WANTED.

We commence publishing regularly from to-day, the names of the thirty or forty thousand post-towns in the United States, and our readers will see that in large numbers of them gas-works may be erected immediately with advantage. Builders and others interested, will thus be able to inform themselves of new openings for business. And as each postmaster will receive several copies of the AMERICAN GAS-LIGHT JOURNAL for distribution, the number thus circulated will probably exceed three millions of copies. *What a chance for Advertisers!*

We shall issue hereafter, to our subscribers only, a private bulletin, containing the names of such new gas-works as we hear proposed, that they may reap any benefit to be derived from the earliest information.

THE WATER-WORKS OF AMERICA.

Our next number will contain full Tables of the Water-Works of this Continent, besides which, we have a mass of interesting details connected with them, which will be presented from time to time.

We beg the officers of British Water-Works to respond promptly and fully to our inquiries. It is no trifling labor to compile statistics, under the most favorable circumstances, and unless seconded by our friends, it is a fruitless and thankless task.

TO AMERICAN GAS-LIGHT COMPANIES.

Please send us your last Reports. We will print them as rapidly as possible. It has been suggested that it would save you trouble and expense to send us your Reports in manuscript for publication instead of printing them yourselves. We will do it. Send them along.

THE SCARLET LETTER AGAIN.

Delinquent subscribers will receive this number in wrappers addressed with red ink. They are requested to remit immediately, as we keep no accounts.

BUSINESS DEPARTMENT.

Messrs. MITCHELL, VANCE & Co., the well-known manufacturers of gas fixtures, whose establishment is probably as extensive as any in the United States, present their card on our first page, to which the attention of the whole country in general, and the State of Alabama in particular, is cordially directed.

The KIDDER GAS REGULATOR, after a repose of several years, is again brought before the world in this number of the JOURNAL, and the proprietors announce their intention to claim for it the same success that it met with when first introduced. The career of this Regulator, though brief, was brilliant, and realized a handsome fortune to its then proprietors. Why it was suspended we are not advised; it will doubtless speak for itself in future. There is a great field waiting for a good Regulator.

OFFICERS OF THE BRITISH GAS-WORKS.

ENGLAND AND WALES.

(*Continued from page* 106, *Vol. II.*)

Lostwithiel. H. H. Kidd, Secretary.

Loughborough. Alexander C. Frazer, manager. Attached to the report is the following choice bit of blank verse—a new feature in the gas world, but not exactly a bad one, perhaps, though that, like some other things, is a mere matter of taste.

I should like the paper in which the list appears, in "Gas Journal." Don't know what you mean by line; Yankee generally pretty sharp, but this time has missed the mark, and we shall impose a slight fine; just send us the sheet containing the repeat; and we shall, after our meat, drink you success in a bumper of wine; mind brother Joe another won't go, unless you keep faith, by my aith; but after all, it may appear small, in one so very tall, for you to observe the bent of the true rewe.

ALEX. C. FRASER, Manager.

18th May, 1860.

Ludlow Union. The price of gas at these works has been gradually reduced from 12s 6d. ($3 12) to 6s. 9d. ($1 68), and will doubtless go lower. Public lamps are charged £2 ($10) per lamp for eight months. Fish-tail, four feet per hour.

Macclesfield. Richard Dickinson, Secretary. The Macclesfield Gas Light Company inform the consumers of gas that the tenth reduced charge for gas will take place from July 1st, 1860.

When the half yearly consumption is

Under 200,000	4s. 0d. per 1,000 cubic feet.
200,000 and under 600,000	3s. 9d. ditto.
600,000 and upwards	3s. 6d. ditto.

Meters provided on the usual terms.

The Company recommend gas as the most economical light for the use of private houses. By the system of fitting up Silk Throwing mills with flexible tubing, they may be lighted to a great advantage.

It is required that consumers give notice on their discontinuing the use of gas, and when a change of tenancy takes place, the incoming party will be responsible for the quantity indexed by the meter, until notice be given at the Works.

The following instructions are given to their meter inspectors, (to which the Company invite the attention of consumers to see performed) to insure a just measurement of the gas passing through the meters:

In the first place turn off the gas at the service pipe, taking out the screws on the projecting part of the meter, and opening one or more of the burners, then pour clean water in at the top screw, until it flows out of the middle one: if there be but two screws, until it flows out at the bottom one, which will be the correct water level.

Replace the screws and burners, turning on the gas for use.

The Company will strictly enforce the fine, under the authority of their Act of Parliament, against all persons who connect, detach, or in any way interfere with the meters.

Should there be a defective supply of gas, or any cause of complaint, it is requested that information be given in writing or by some competent person, at the Works, that early attention may be given to remedy it.

Persons may provide their own meters by permitting them to be tested at the Company's Works.

Maidenhead. R. S. Poulton, Superintendent and Secretary.

Maidstone. John Somerville, Engineer and Manager. Charge public lamps, £3 10 ($17 50) per annum. Keep in repair, light and extinguish,

Maldon. Charge for each public lamp £3, for 8 months.

Malvern. William Nichols Macy, Clerk. These gas works belong to the Corporation under the local Act of 1851 for the government of the town, and whatever profits arise fall into the rates in aid thereof.

Manningtree. J. W. Webber, Manager. Charge £2 10s. ($12 50) for each public lamp, lighted nine months.

Market Drayton. Thomas Owen, Engineer.

Market Rasen. A private trading firm own the gas works. Public lamps charged £2 ($10) each, lighted only in winter months from dusk till midnight.

Market Weighton. James Gower, Manager. Gas works belong to the North Eastern Railway Company.

Marsden. This town is in Yorkshire, near Huddersfield, so that two-thirds of the gas is consumed in manufactories.

Merthyr Tydvil. John Lees Cocker Manager. A very full and detailed report, which we wish we might have been permitted to print in full for the information of our gas companies. There are two gas works in this district—we have no report from the other, because our agents sent but one circular. We thank Mr. Cocker and the Directors of his Company for their communication.

Middlesborough. John Dunning, Manager. These gas works are managed by the local Board of Health. It is in the West Riding of Yorkshire.

Mold. Robert Williams, Manager. This is a gas and water company. Will Mr. Williams please fill up our water circular as fully as he did this.

Monmouth. Robert John Skynner, Secretary. Public lamps charged £3 each for nine months. This is also a gas and water company.

Morley. William Smith, Jr., Secretary. Thanks for your full report, and your request is complied with by this mail.

Morpeth. This is one of the limited companies. We wish somebody would tell us what a "limited" gas company is.

Moreton-in-Marsh. H. J. Busby, chairman. Public lamps charged £2 10s. each per annum.

Newcastle-upon-Tyne and Gateshead-Union. The very low price of gas charged to public lamps will attract attention—only 1s. (25 cents) per 1,000 feet. To private consumers, 4s. ($1), with ten per cent discount and upward for large amounts.

Newnham. Another limited company. The price of gas will be reduced after Christmas next. Coals cost from 4s. 6d. ($1 12) Lime coal, to 13s. ($1 62) Block coal, per ton. The former produces about 6,000 and the latter 9,000 ft. of gas per ton. The coke from the former is of little or no use. The latter produces 22 bushels of good hard coke, per ton. We wish the officer had signed his name to the report, that we might know to whom we are indebted for all the particulars. He will note that the part marked confidential, is so treated.

Newport, Isle of Wight. Gas-works, private property.

North Allerton, Ditto.

Northampton. Hunter Jones, Engineer.

North Shields, Borough of Tynemouth. Charge for Meters, 1s. (25cts.) per quarter; one-third of all the meters belongs to consumers.

North Walsham. Edward White, Agent.

Nottingham. This is one of the big companies, with £200,000 capital. The report is full and interesting, for which we are obliged. No name signed.

Odiham. John Harwood Hornsby, Sec.

Okehampton. Wm. Ashley, Manager. The high price of gas is caused by the coals being very dear; the land carriage is from 25s. to 30s. ($6 25 to $7 50) per ton.

(*To be continued.*)

THE WATER-GAS AT NARBONNE, FRANCE.

From Le Journal de l'Eclairage au Gaz.

We copy from the *Genie Industriel* the description and plans of the water-gas works at Narbonne, and in reproducing these observations it is not our intention at the present moment to offer any opinion as to the merits of the system.

Our readers have not forgotten that, after many ruinous experiments, the gas company of Narbonne was compelled to relinquish its endeavors to bring water gas to any practical use. More recently however new attempts have been made in the same city, and the method of M. Galy Cazalat has been substituted for that of M. Gillard. This method, which dispenses with retorts and effects the decomposition of water steam over a mass of burning coke in a close furnace, seems to us to reduce the expenses of manufacture very considerably. It therefore remains to be seen if the quantity of oxyde of carbon is greater in proportion, and even then we incline to the opinion of M. Fage, the constructor of the gas works at Narbonne, that the manufacture of water gas requires the most unceasing vigilance, or a very dublious light will be obtained—a light more resembling a lighted cigar stuck in a lantern, than the star-like brilliancy of a jet of gas.

It would seem that application of M. Cazalat's process has been made at Narbonne without authority from him, because we learn that recently a seizure has been made of the buildings and apparatus, and it is our intention to keep our readers posted in the results of this incident.

A. LE ROUX.

Already, upon two different occasions, *Le Genie Industriel* has given very circumstantial accounts of hydrogen gas extracted from water by M. Gaillard's method; but when we last wrote on the subject, no very extended application of this kind of gas had been made, for the small gas works which existed at *Passy* scarcely served to experimentalise upon this new system.

We are happy to return to the subject in publishing the details of a process adopted at Narbonne, by M. Page, to whose kindness we owe the following particulars:

Now that the city of Narbonne has been lighted for more than a year by pure hydrogen gas, we think few persons will read without interest the details of the manufacture, and the modifications which have rendered its application so easy. They will also notice at the same time the improvements of which this branch of industry is susceptible, and which, although not essential at Narbonne, would be indispensable in a larger city.

It is first of all necessary to remember the principles upon which the manufacture of gas from water depends. We will thus proceed to describe the series of operations pursued at Narbonne, where the gas works were erected in 1856.

The gas which is used for lighting this city is almost pure hydrogen, extracted from water by means of charcoal at red heat. In the reaction which takes place, the water is resolved into its two elements—hydrogen and oxygen. This last, acted on by the charcoal, forms carbonic acid, with a small admixture of oxyde of carbon, produced by the disoxygenation of a part of the carbonic acid during its contact with the charcoal. If it is wished to avoid this disoxygenation, the carbonic acid must remain in the presence of the charcoal the shortest possible time.

We shall presently see how this condition can be obtained. The mixture of gases passes first into a refrigerator intended to cool and condense the steam not decomposed, and afterwards into purifiers containing lime, which fixes the carbonic acid. The hydrogen then containing an almost infinitesimal quantity of oxyde of carbon, is sent into the gasometers, and thence to the consumers.

Hydrogen has a great calorifying power, but its flame produces a very feeble light. This defect is remedied by a simple and well-known contrivance, and consists in introducing into the flame a small wire work of platina, the form of which we shall presently indicate. It is this wire brought to a white heat which produces the light.

A kilogramme of water contains 889 grammes of oxygen and 111 grammes of hydrogen; that is to say, 622 litres of the first of these gases, and 1,244 of the second, and a kilogramme of carbonic acid, contains 273 grammes of carbon and 726 grammes of oxygen. A very simple calculation will show that 335 grammes of carbon will decompose a kilogramme of water, containing 1,244 litres of hydrogen; a kilogramme of water will then decompose 2k.994 of water, and will give as a result 3,720 litres of hydrogen, and 1.860 litres of carbonic acid; but in consequence of foreign matters contained in the wood charcoal, it is admitted that a kilogramme of this combustible will only realize 3,000 litres of hydrogen instead of 3,720, and 1,500 litres of carbonic acid. This amount of carbonic acid would saturate 3k.9 of protoxyde of calcium. In other words, each cubic metre of gas sent into the gasometer receives 1k.5 of powdered slack lime for its purification. From observations made at the works at Passy, from the indications given above, and from the numerous experiments previously made at Narbonne, it will be very easy to arrive at the necessary magnitude of the works.

The general plan and detail of the works at Narbonne are indicated on a subsequent page.

We will remark to begin with, that the ovens, *A*, do not essentially differ from those used in coal gas-works. They contain in all sixteen cast-iron retorts, each one presenting a square section surmounted by a semicircle, and is furnished with a tube, forming a double branch, through which runs a conductor of 15 millemeters diameter. This conducting piece has two screws at its lower end, by one of which it is attached to the retort, and the other forms part of a conical joint fixed to the copper pipe, *e*, (14 millemetres in diameter) communicating with the generators, *B*, whose supply can be regulated at will by means of taps placed at convenient distances. To each branch of this piece an iron tube, closed at the extremity, near the bottom of the retort, is fastened by screws.

A retort is furnished with two of these tubes, and each is perforated over 1m.10 from the closed extremity along the side, turned towards the bottom of the retort, with sixty-five holes, placed at equal distances over three generatrices, divided into a scale of 10 millimetres, in such a way that the holes situated over the extreme or outside generatrices, alternate with those placed over the centre one.

Into these holes earthenware stoppers are inserted, pierced through the length of their axis with openings of half a milllimetre diameter; these minute openings give passage to steam coming from the generator, and it is easily seen that they could not be cut in the iron itself, as they would have been quickly choked by the oxyde produced by the steam

In order to prevent the flexion of these tubes, which would not fail to happen when they and the retorts are red hot, they are supported by two iron cross-pieces, *f*, resting upon baskets. The 130 holes are thus on the two pipes, and consequently over the upper surface of a bed of wood charcoal, from 10 to 15 centimetres thick, placed upon the flat part of the retort. This charcoal ought to be broken very small, for when the pieces are large the gas is not formed so rapidly. Each retort will coutain from 20 to 25 kilogrammes, and is renewed every four hours.

Now that we understand the make of the retorts, which is the principal object in the production of the gas, it will be easy to understand its manufacture. The retorts being brought to a red heat, a layer of charcoal is introduced, which, speedily becoming incandescent, the retorts are then closed, the necessary taps are opened, and steam is brought by the pipes, *e e*, from one of the generators, *B*. This vapor is introduced by the branched piece, *a*, into the tubes furnished with the earthenware stoppers, through which it passes in small jets by the openings already mentioned. It is thus projected upon the surface of the incandescent charcoal, and its immediate decomposition takes place. The result of this decomposition is a mixture of steam, not decomposed hydrogen and carbonic acid, which must be immediately discharged from the retort if we wish to avoid the formation of oxyde of carbon. We know, indeed, that when carbonic acid remains in contact with charcoal, it abates the vapor of carbon with more rapidity as the duration of the contact increases and becomes changed with oxyde of carbon. The proper means to prevent this formation is evidently to force the gas as quickly as possible from the retort.

This remedy does not consist, as was at one time erroneously believed, in an exaggerated enlargement of the section of pipe which gives issue to the gas. A little reflection will show that the greater or lesser diameter of this pipe can have no influence upon the length of time that the gas remains in contact with the charcoal; we have, indeed positive evidence that the speed with which it is driven from the retort is in proportion to the rapidity of its production only, and not to any pressure exerted by the form of the apparatus. If the process of production is languid, it is certain that a large pipe will not

force it out quicker than it is made. The incontestable conclusion is, then, that rapidity of fabrication is the only means of procuring a gas without an excess of carbon. It is also as well to notice in passing that, in all probability, too much consideration has been given to this oxyde. It has never yet occasioned the least accident; and it is possible that the day may come when we shall be even anxious to procure it, and use it as we do hydrogen itself.

The rapidity with which water is decomposed depends upon the temperature of the charcoal; it is therefore important to produce the highest degree of heat that can be obtained, without passing the limits prescribed by the nature of the material of which the retort is made. As to the pipes which give issue to the gas, they have a diameter of seven centimetres more than sufficiently large, because there is nothing to fear, as in coal gas, from the deposition of tar and other substances.

The combination of gases issuing from the retorts then is composed of hydrogen, carbonic acid, from four to five per cent. of oxyde of carbon, and a small quantity of the remaining steam; this mixture is delivered to the pipes, *c*, seven centimeters in diameter, placed in water in such manner as to isolate each retort, in a barillet or refrigerator, of iron plates surrounded by water, where the vapor is condensed immediately at the same time that the gas is cooled by passing in the direction indicated by the dotted line. The water which surrounds the refrigerator, and contained in a hollow, *D*, lined with cement, is constantly renewed, and flows in a direction opposite to that of the gas; the fresh water arrives by *a*, and leaves by *b*; when it has become heated to a certain degree, it is introduced by a pump, *b*, which takes it in a well, *u*, and carries it to an elevated reservoir. The water accruing from the condensed vapor is taken from the refrigerator by a syphon. There now only remains a combination of hydrogen and carbonic acid, (we may omit any further mention of oxyde of carbon, on account of its slight importance) which, leaving the refrigerator, is sent by a pipe, *e*, to the purifiers, whose office is to retain carbonic acid. These purifiers, *F*, are eight in number, divided into two lines, one of which is in action as the other is being prepared. This manœuvre is easily accomplished by swivel valves, which permit the gas to pass into either one or the other of these lines of purifiers. A particular form has been given the purifiers, which makes the care of them much easier than was formerly the case. The gas follows the course indicated by the dotted lines, and that which distinguishes this apparatus is the partition which allows the pipes for receiving and distributing the gas to be upon the ground, and leaves a free and easily accessible space all round them. This would not be done with the old-fashioned purifiers, in which the discharging pipe was near the top.

The iron plates, *z*, perforated with holes, six millimeters in diameter, are covered with a bed of powdered slack lime, two centimeters thick, through which the gas passes and leaves its carbonic acid.

There is one essential point to observe with respect to the state of the lime employed—it ought not to be in a dry powder, because in that state it will not easily absorb the carbonic acid; on the contrary, although in powder, it must be damp, having about the same consistency as sand when used by founders. It will then absorb the carbonic acid with such avidity that its temperature will rise to 70 degrees (Fahr.)

After leaving the purifiers the hydrogen is almost pure, and is passed into two gasometers whose receivers, of waterproof masonry, may be seen at *G*, each furnished with two valves, *i*, one for the entrance and the other for the exit of the gas towards the city, and corresponding with the pipes, *c'*, for entrance and departure of the gas, by means of reservoirs or gas chests, with syphons placed at the bottom of the wells. *m*.

The gasometers are sheltered from the prevailing wind, which is very violent at Narbonne, by a wall making part of the general enclosure; they are not different from those used for coal gas, therefore we shall only give the principal dimensions:

Diameter.....	10 m. 50 cent.
Height at the edges.....	5 " 40 "
Hollow of the roof.....	0 " 40 "
Thickness of roof plates....0,003	millimetres.
Thickness of the plates for the cylindrical part.....0,002½	"

The diameter of the rivets is five millimetres, and have a distance from each other of 25 millimetres.

The whole is consolidated—

1. At the bottom by a horizontal interior crown, of 0 m. 40 in breadth, of plates of 4 millimetres bound to the vertical plates of the circumference or cylinder by curved iron work.

2. In the cylinder by twelve vertical curved iron plates.

3. And the roof fastened to the cylinder by an iron cornice band, is strengthened by twelve hollow iron braces, starting from the circumference and converging to the centre.

These gasometers have a free movement, and each one is guided in its ascent by twelve rollers, six of which are at the bottom of the gasometer, and six at the top, alternating with each other. These work in twelve vertical grooves, six of which are built in the surrounding wall, and six in wood-work, placed above it. The weight of each gasometer is 8.500 killogrammes, producing a pressure of nine centimetres upon the water level. The weight thought necessary being fifteen centimetres, it was judged expedient to add a supplementary weight, which has been placed inside upon the horizontal crown.

The gas, upon leaving these holders, passes through a regulator, *s*, and is sent to the consumer by iron pipes well pitched, the greatest diameter of which is 0 m. 135. Notwithstanding the subtle nature of the hydrogen, there is scarcely any escape or leakage in the pipes when the proper inclination has been observed. The total length of pipe is 10,893 meters.

Experience has shown that the light obtained from hydrogen is increased in intensity by pressure, and diminished when the burners exceed a certain diameter: between the two extremes there is a medium to be obtained, which, with the least expense, yields the greatest possible result. Now this pressure is from six to eight centimetres of water, consequently the last figure has been chosen for the size of burner, and fifteen centimeters for the gasometers, in order to compensate for the loss of pressure by the friction of the gas in the conducting pipes. In the retorts, the pressure reaches thirty centimeters, and although this seems considerable, it does not appear to have any injurious effect either upon the production of the gas or the preservation of the apparatus.

The burners used are of a round form, with inner and outer air passages. The wirework wick, *m*, of platina is held at a slight elevation above the burner by four hooks, also of platina wire, fixed upon a moveable ferrule, *v*. A small crown of leaf platina, *t*, pierced with twenty holes, is set at the top of the burner through which the gas has to pass.

At first, in the experiments made at Passy, the air passages of the burners were made of silver, upon which the combustion of the gas brought out a fibrous efflorescence which finally obstructed the passage of the gas, and the light in consequence growing red, and losing its intensity, became almost worthless. The wicks of these burners were metallic threads crossed diamond-wise.

In the wicks now used at Narbonne these inconveniences are avoided; the silver crown is replaced by one of platina, obstructions are not formed in the burners, and the intensity of light is not diminished. The wick, *m*, differs essentially in principal from that adopted at Passy, and has many advantages over it, and is used exclusively at Narbonne. These advantages arise from the vertical position of the wires, and from their larger diameter, 0 mill. 30 instead of 0 mill. 10. The vertical position of the wires opposes scarcely any obstacle to the passage of the gas, which is thus enabled the more readily to bring the whole length of wire to a white heat.

The increased diameter of the wire renders the wicks easier to make and to repair, and at the same time they are stronger. The position of the wick on the burner ought to be exactly regulated, in order to obtain the best effect with the greatest economy.

The burner has twenty holes; these holes have 0 mill. 40 diameter, and are pierced in the crown of platina over a circumference of twenty-four millimetres, 2-3ds diameter. The lower diameter of the wick, *m*, being twenty-one millimeters, it therefore comes in contact with the interior of the cylinder of flame formed by the twenty jets of gas. Thus situated, the platina wires are brought to a dazzling whiteness, and their irridation is so considerable, that at a distance of ten feet it is impossible to distinguish them separately. The wick seemed to form a compact and brilliant body of light.

From the above details we may conclude that water gas, in its manufacture and employment, presents many difficulties which make it, if one may so express it, a superlative gas; it can never be mediocre, and therefore requires a company of the most expert workmen. The lighting of the public lamps above all, calls for improvement; they are now lighted by mounting a ladder. At Narbonne, where the number of lanterns is not very large, this is not a great inconvenience; but in a large city it would be a serious evil, and from necessity means would have to be found to light the water gas in the same manner as coal gas, by a lighting rod.

In consequence of the limited number of consumers, the price of gas is very high at Narbonne, and the general expenses are very large, as the works, including all the accessories, cost 179,731 francs, 98 centimes, having been constructed for the daily consumption of 1,200 cubic metres, which is far above the present demand. The cost price for material is estimated as follows:

To produce 100 metres of gas, 38k. 00 of wood charcoal, at 0f. 10c.....	3 f.	80c.
105k. 00 of coal to heat the retorts and one generator, at 0f. 05.....	5	25
82k. 00 of quicklime for purification, at 0 f. 01.	0	82
	9	87

Whence the cost of each cubic metre is 0f. 0987. The price of the coal alone probably is capable of reduction. With a small building and apparatus constructed merely for experiments, a small retort of 0m. 26 in length and 0m. 07 in diameter, produced 600 litres of gas an hour. With the retorts of the Narbonne works 10,000 litres were obtained in the same time. The volume of these retorts being respectively one litre 5 and 332 litres—in proportion about 1 to 221. Now, if the production was in proportion to the volume of the retorts, the larger ones ought to furnish 132,600 litres of gas instead of ten thousand litres. These figures make us think that the form of the retorts is not the best that might be adopted, and we are of opinion that a form of smaller dimensions will be obtained capable of producing the same amount of gas with a considerable less expenditure of fuel.

Would it not be possible, for example, instead of using a retort containing 25 kilogrammes of charcoal, which must be kept at an intense heat during the entire length of the operation, which lasts four hours; and after which the retorts have to be entirely recharged, thus wasting a vast amount of heat—to employ a retort containing only one or two kilogrammes of charcoal, which might be constantly renewed, as the combustion gradually exhausts the previous charge. In this case the heating of the ovens would be more economical, and might be brought down to one centime the cubic metre of gas. The burner with twenty jets consumes 250 litres an hour for a light equal to that of a carcel lamp, and costing at present, to private individuals, nine centimes, would not then cost more than six, and would be still cheaper in a large city.

The purification by lime leaves nothing to be desired with respect to the purity of the gas, but there are very grave inconveniences connected with the accumulation of the lime that has been used, and which it is often difficult to get rid of without conveying it to a considerable distance. This inconvenience will be removed if a favorable result is obtained from the experiments now being made at Narbonne by M. Prax.

These experiments are founded on the well known fact that carbonate of soda, brought in contact with carbonic acid, absorbs and changes it into bi-carbonate of soda, from which a moderate heat will again expel all the gas taken up. In this manner the soda would serve over and over again indefinitely, and there would be an end of the difficulty with respect to the lime.

Every one knows that cast iron retorts are very expensive and decay rapidly, therefore trials were made with earthen ones; but, as might have been foreseen, their porosity prevented their success. These pores, which are quickly filled by the smoke and tar of coal gas, allow the greater part of that extracted from water to escape; this loss might probably be diminished by the employment of a gas exhauster, to lessen its pressure in the retort; but on this question it is experience only can decide. We will conclude by giving some details respecting the stability of certain parts of the construction of the works.

The timber work of the hall, where the ovens are situated, is of pine, strengthened by iron ties, with rafters 3 m. 70 apart, supporting a roof of double, hollow tiles, with an open top surmounted by a smaller roof tiled in the same manner; thus provision is made for a free circulation of air. The thrust of the cross beams is ringed together by a double headed tie of iron twenty-seven millimeters round.

Each bar of this double tie is terminated at the extremity by a strong screw and nut; cross pieces united by bands, embrace, by means of bolts, the false kingpost and the end of the cross beams. The chimney is built upon a circular buttress of masonry, upon a bed of hard marl. It is twenty-five metres high, and constructed of bricks of 0m. 22 by 0m. 11 and 0m. 5 thich, cemented by a fine lime mortar. This was erected without scaffolding, and the materials were sent up by the interior. At the bottom of the chimney two openings were left opposite each other; into one of them a cable, leading from a windlass a little way off and passing through a pulley at the mouth of the same aperture, was carried up the inside and sent down again by a return block, which was taken up as the building increased in height; at the lowest end of the returned cable a large bucket was attached to receive the bricks, mortar, &c., through the opposite opening; the bucket was then taken up by means of the windlass to the top of the building, and the materials were within easy reach of the workmen. The steps for their ascent and descent, and the two openings, were built up when the chimney was finished.

The base being sheltered from the wind, only the resistance of the conical part was calculated. The cube being 29m. 26, and weight 73,000 kilog. This weight being multiplied 1m. 20, half the breadth of the base, or arm of the lever of resistance, to the overthrow, gave 87,000 as a product which represents the amount of this resistance or stability.

The surface exposed to the wind is equal to—

$$\frac{2\text{m. } 40 + 1\text{m. } 10}{2};$$

The mean breadth of the trunk of the cone multiplied by its height—

Product 34m. 47,

ought to be multiplied by the strongest pressure of the wind upon the square metre, which, on account of the oblique face of the chimney to the wind, is reckoned at 196 kilog.

The product 6,757 kil. is the total effort tending to overthrow the chimney. We have then only to multiply this effort by its lever length, that is, by 8m. 60 of the height of the centre of gravity from the surface, which brings out 58,110 as the amount of wind power. This amount, compared with that of the resistance, shows the latter to be superior; or, the power of the wind to overthrow the chimney being one, its stability is one and a half.

The dimensions adopted for this chimney, enables them to obtain a powerful draught, which can be regulated at will by means of a register, attached to the furnaces.

Note.

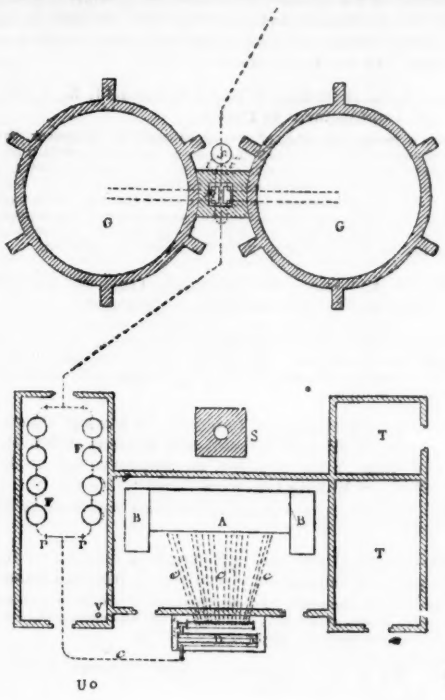
A metre is the 10,000,000th part of the distance from the pole to the equator, about 41 inches.

A gramme is equal in weight to a cubic centimetre (100th part of a metre) of water, at a temperature of 4° centigrade.

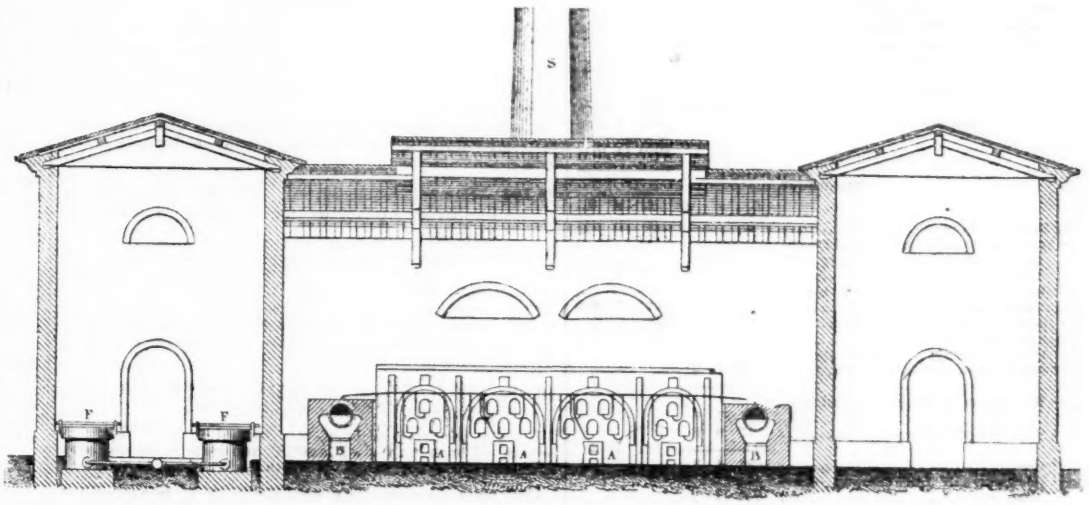
A litre is a liquid measure = the 10th of a metre long, the 10th of a metre deep, and the 10th of a metre high.

A kilometre is 1,000 metres.
A killogramme is 1,000 grammes.
A millimetre is the 1,000th part of a metre.
A centimetre is the 100th part of a metre.

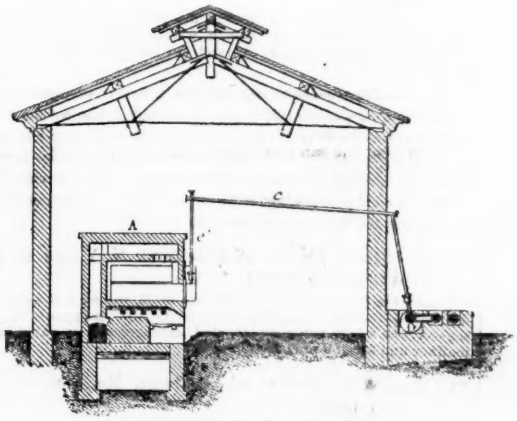
WATER-GAS WORKS AT NARBONNE.



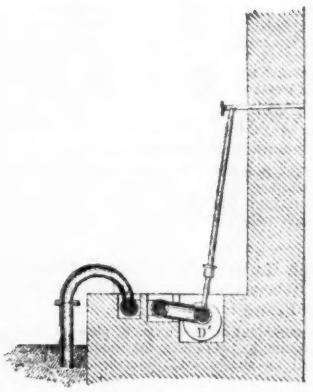
General plan of the Establishment.—Scale of 1 to 500.



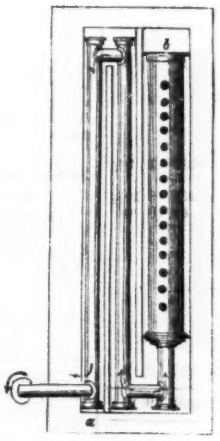
Elevation of the Works.—Scale of 1 to 200.



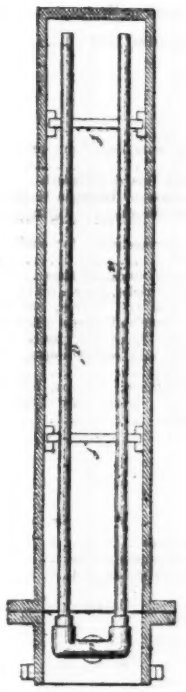
Elevation of Furnace-House.



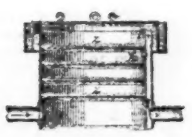
Refrigerator.



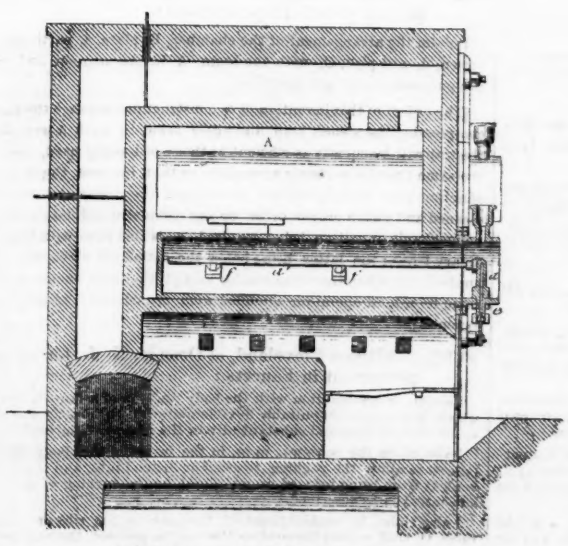
Section and Plan.



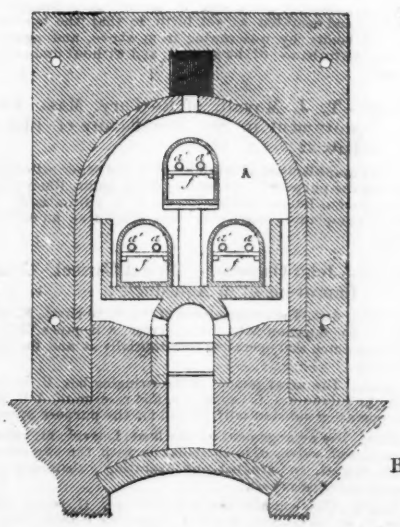
Section of Retort.



Purifier.

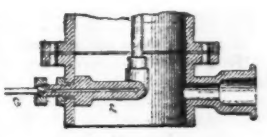


Longitudinal view of Furnace.

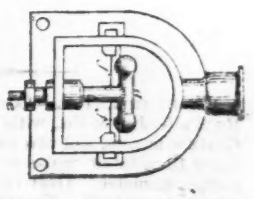


Section of Furnace.

Burners with wick; longitudinal and transverse section.



Section of portion of Retort.



End view of Retort.

REPORTS OF GAS-LIGHT COMPANIES.

TAUNTON, ENG., GAS-LIGHT AND COKE CO.

BALANCE-SHEET, JUNE 30th, 1859.

RECEIPTS.

Dr.	£	s.	d.	£	s.	d.
To cash from Local Board of Health for Gas supplied to Public Lamps..	769	0	0			
" Trustees of Taunton Market and Commissioners of Turnpikes.....	39	15	0			
" Private Consumers.....	3462	1	0½			
" For Coal, Coke, Tar, Refuse Lime, Casks, Brushes, Transfers, and Transfer Stamps.....	1577	14	3			
				5838	10	3½
Balance.....				131	4	6¾
				5969	14	10¼

EXPENDITURE.

Cr.	£	s.	d.	£	s.	d.
By Balance, June 30th, 1858.....				300	1	0¾
" paid materials for Repairs of Premises, and Machinery, including Iron work for fixing retorts, &c.....				135	8	5½
" Extension of Works, new mains, meters, and services.....				312	6	10½
" Salary—Manager.....				275	0	0
" Rates and Taxes.....				124	18	1¼
" Postage, receipt, & transfer stamps.	17	9	0			
" Stationary and Printing.....	21	1	6			
				38	10	6
" Wages, gas manufacture and labor in yard.....	583	17	8			
" Do.—Lamplighters.....	97	9	6			
				681	7	2
" Coal.....	1692	4	3			
" Freight and rail charges, canal dues, &c.....	749	14	2½			
				2341	18	5½
" Freight of tar and carriage.....	9	3	0			
" Casks and cooperage.....	2	18	0			
" Brooms and baskets.....	11	1	5			
" Lime.....	45	11	3			
" Trade allowances.....	21	9	1¾			
" Sundries.....	13	10	7½			
				103	13	4¾
" Subscription to Taunton and Somerset Hospital, 1858-9.....				10	10	0
" Directors' fees.....				30	2	6
" Dividends and interest on loans.....	1103	16	7			
" Interest on Mortgages.....	324	15	8			
				1428	12	3
" Liabilities, 1858.....				187	6	1
				5969	14	10¼

ASSETS.

Dr.	£	d.	s.	£	s.	d.
To gas rents due from private consumers.....	933	12	8½			
" Local Board of Health	375	0	0			
" Trustees of Taunton Market.....	29	5	0			
" Commissioners of Turnpikes.....	10	10	0			
				1348	7	8½
" Ledger accounts for coal, coke, tar, &c.....				498	8	10½
" Coal in stock, 86 tons.....				64	10	0
" Clay, bricks, burrs, main pipes, purifiers and valves, old condenser, brusher and valves, office and board-room furniture, tools in smiths' shop and retort house, and proving apparatus.....	662	17	9			
" Stationary, stamps, bill-heads, receipt books and other account books.....	14	5	6			
				677	3	3
				2588	9	10

LIABILITIES.

Cr.	£	s.	d.	£	s.	d.
By Balance.....				131	4	6¾
" Tradesmen's bills.....	598	3	1½			
" Dividends unpaid.....	29	12	1			
				627	15	2½
Balance.....				1829	10	0¾
				2588	9	10
To Balance.....				1829	10	0¾
By Dividend, 6 ⅞ cent. on share capital of £18,200.....				1092	0	0
Balance.....				737	10	0¾
				1829	10	0¾

CAPITAL ACCOUNT.

	£	s.	d.	£	s.	d.
2800 shares of £5 each.....	14,000	0	0			
2800 new shares, on which a call of 30s. per share has been paid.....	4,200	0	0			
Mortgage debt.....	7,266	0	0			
				25,466	0	0

W. E. GILLETT, Chairman.

THOS. FISHER, Sec'y.

July 7, 1859.

Examined and found correct July 11, 1859.

THOS. COKER, H. TURLE, WM. WOODFORD, } *Finance Com.*

Audited, found correct, and confirmed, July 15, 1859.

W. H. CHORLEY, F. WHITHAM, JOHN PORTER.

WILMINGTON, DEL.—Coal gas-works, built by Wm. Bucknell, Jr., & Co., with iron retorts; Code, Hopper Gratz's meters, and two gas-holders by Merrick & Sons. Some 10 miles of mains are laid, ranging from 3 to 10 inches diameter. Over twelve millions cubic feet of gas was made in 1859. No meter-rent.

PATENTS.

Inventors are informed that Patents are procured at the Rooms of the AMERICAN GAS-LIGHT JOURNAL, through F. C. TREADWELL, Jr., Esq., an experienced Patent Agent and Expert.

UNITED STATES.

29,769.—Edward Conway, of Dayton, Ohio, for an Improvement in Heating and Cooking Apparatuses:

I claim, first, The arrangment of valved compound burners, C E c, in the described combination, with a cooking stove, A, for the purposes set forth,

Second, The compound burner composed of a wick, t, and circular series of jets, u, communicating with the alcohol boiler, as set forth.

29,794.—Samuel Kennedy, of Hibbetts, Ohio, for an Improved Apparatus for Feeding Sawdust to Furnaces:

I claim the combination of the stepped plunger, B, cylinder, A, and hopper, f, with the box, D, scatterer, D', and shaft, C E, as and for the purpose shown and described.

I also claim the arrangement of the bearing of the lower end of shaft, E, with a stirrup, L, below the box, D, and upon screw, J, which also connects the stirrup and frame, K, together—all as set forth, for the purpose specified.

29,810.—H. G. Nelson, of Lockport, N. Y., for an Improvement in Water Wheels:

I claim the arrangement of the gates, I I, shafts, H H, and sectors, J J, with the shaft, D, vent, C, and case, A, all as shown and described, for the purpose set forth.

[This invention consists in a novel and improved manner of constructing the wheel, whereby a very cheap, simple and durable wheel, with oblique or tangential buckets, is obtained. The invention also consists in an improved gate, arranged and applied to the scroll so as to regulate the discharge of the water therefrom, and its consequent action on the wheel.]

29,831.—T. B. Smith, of Marietta, Ohio, for an Improvement in Lamps:

I claim, first, The peculiarly constructed burner described, consisting of the wick tube, T, and cup, C, constructed and united in the manner set forth.

Second, The shade, S, formed and operating as described.

29,838.—J. T. Williams, of York Borough, Pa., for an Improvement in Lamps:

I claim the employment, in combination with a lamp that is supplied from an elevated reservoir of a transparent section, F, when said section is arranged between the lamp and the oil supply on a line horizontal to the proper oil level of the lamp, so as to facilitate the replenishing of the lamp without extinguishing the flame and without overflow, all as shown and described.

28,840.—D. T. Woodrow, of Cincinnati, Ohio, for an Improvement in Furnaces:

I claim, in combination with an outer casing, A, the fire-box, B, air tube, J, air chamber, K, and cylindrical chambers or radiators, F G, the latter containing the deflector, H, the whole being arranged in relation to each other and within the outer casing, A, as set forth.

29,843.—Joseph Hardy, (assignor to O. Chamberlain and W. H. Babcock,) of Moline, Ill., for an Improvement in Plows:

I claim the arrangement of the axle, B, plow, G, beam, H, guide bar, I, rack, J, sector, K, standard, M, caster wheel, F, arbor, E, and frame, A, all as shown and described, for the purpose set forth.

[This invention relates to that class of plows which are connected to a mounted frame containing a driver's seat, and are generally known as sulk or carriage plows. The invention has for its object the ready and agile adjustment of the plow, and also of the wheels, whereby the device may be adapted to its work so as to plow or form a furrow of greater or less depth, as occasion may require, and also adapted so as to be readily drawn from place to place.]

29,872.—Albert Fuller, of Cincinnati, O., for an Improvement in Hydrants:

I claim, first, The yielding valve, H, and waste valve, M, when combined, arranged and connected substantially as set forth, so as to permit the waste valve to operate alternating with the main valve, or remain inactive, at the option of the operator.

Second, The described combination of pipe or barrel, E, screw nozzle, F, guides, e, and casing, D, the said parts being constructed, arranged and operated as set forth, so that the hydrant may be removed bodily by unscrewing from above, and again replaced, without disturbance of the ground, and without undue exposure of its base.

29,898.—T. J. Mayall, of Roxbury, Mass., for an Improvement in the Manufacture of Flexible Gas Tubes:

In the manufacture of flexible tubes and other articles which are used for the purpose of conducting or retaining illuminating gas or other gaseous fluids, I claim the use of a vulcanizable soft india-rubber compound, containing gum shellac as an essential ingredient.

29,906.—John Osborne, of Mount Carmel, Conn., for an Improvement in Aqueducts:

I claim, first, The arrangement of the valve chest, E, with valves, e e', in combination with the reservoir, A B, pipes, C D, and pipe, F, constructed and operating substantially as and for the purpose set forth.

Second, The arrangement of the swinging box, G, in combination with the valve stem, f, valves, e e, and reservoirs, A B, constructed and operating substantially as and for the purpose specified.

Third, The arrangement of the float, l, lever, m, valve, k, aperture, n, and valve, o, in combination with the two chambers, j j', of the box, G, constructed and operating substantially as and for the purposes described.

Fourth, The combination with the box, G, reservoirs, A B, and pipe, F, of the faucets, M and O, operating substantially as and for the purposes set forth.

[The object of this invention is to arrange an aqueduct in such a manner that, by a simple and ingenious device, the head of the water passing through the aqueduct can be changed and the supply of water increased to suit circumstances.]

29,918.—G. C. Selfridge, of North Greenfield, N. Y, for an Improvement in Pumps:

I claim a pump consisting of an upper and lower chamber, the upper chamber being one half the area of the lower one in diameter, placed one above the other, having a solid piston moving in the upper and valved piston moving in the lower chamber, both attached to the same rod and operating in combination with a fixed valve seat and its valves below the discharge orifice lying between the pistons, the whole arranged and working together in the manner and for the purposes set forth in the above specification.

29,932.—C. A. Wilson, of Cincinnati, Ohio, for an Improvement in Steam-heating Apparatus:

I claim a tubular radiator communicating at the bottom with a steam pipe, A, and its upper and free end discharging into the atmosphere through an aperture guarded by an automatic valve; the whole being constructed and operating substantially as and for the purposes set forth.

29,941.—August Schmidt (assignor to himself, Charles Schmidt, Edward Schmidt and Herman Schmidt,) of New York city, for an Improvement in the Mode of Making Gas from Wood:

I claim the manufacture of illuminating gas from wood by the successive processes set forth.

29,949.—Leonard Bricker, of Springfield, Ill., for an Improved Combination of Smoothing Iron and Lamp:

I claim the arrangement and combination of the lamp with elevated tube, B, and guard, C C, dovetail, A A, and smoothing iron, all in the manner and for the purpose described.

29,979.—P. A. Letourneur, of New Orleans, La., for an Improved Cement:

I claim a cement which I call indestructible cement, composed of the above substances, prepared as aforesaid, which will make the roofs and other places covered with it both fire and water proof.

29,980.—C. A. Littlefield, (assignor to himself and David Boyle,) of Covington, Ky., for an Improvement in Fire-places:

I claim the arrangement of the bonnet, B, hollow crown, E, partition, e, tubes, H, flues, B B', aperture, K F G, and doors, i and k, constructed, combined and operating in the manner and for the purposes set forth.

29,983.—George Marlow, of Cincinnati, Ohio, for an Improvement in Apparatuses for Heating Buildings:

I claim the arrangement of the fire-pot, A, ash-pit, B, open topped heater, C, and escape pipe, g, with the radiator, D, air flue E E, and cold air casing, F, as and for the purpose shown and described.

[This invention consists in arranging a heater surrounded by a radiator and outside casing, in such manner that the bottom of the heater, as well as its top and sides, are free to come in contact with the surrounding air, which is introduced through a passage between the outside casing and the radiator, and which, after having been heated by coming in contact with the surface of the heater, passes up into the building through suitable flues.]

29,989.—Henry Pease, of Brockford, N. Y., for an Improvment in Pumps:

I claim the combination of the cylinder, E, wings, b b, supports, d d, bevelled pistons, F, graduated grooves, n o, and governing passage, T, the whole being constructed, arranged and operated in the manner and for the purpose set forth.

31,110.—L. L. Alrich, of Carthage, Mo., for an Improvement in Faucets:

I claim the valve plug, C, with its key-hole recess, g, and spring, G, in combination with the cylinder, F, and the faucet portions, A a and B, the whole being arranged and operated by a key, in the manner and for the puposes set forth.

[This invention is an improvement in faucets wherein a key is used to open or close the faucet. It consists in operating a plug or valve that is fitted into a cylindrical chamber projecting up from the top of the faucet, so that it may be moved up and down, but which will not turn in the cylinder; said plug being seated in such a manner in the faucet tube and acted upon by a spring that the flow of liquid can only be obtained by using the key adapted to the faucet.]

30,121.—Alfred Carson, of New York City, for an Improved Stench Trap for Sinks:

I claim the arrangement of the chamber, B, plate, a, partition, a, screen, d, and pipe, C, with the basin, A, in the manner and for the purposes shown and described.

[The object of this invention is to construct and arrange the parts compressing the stench trap, and apply them in such a way that the trap will be equally as efficient as those ordinarily used, and at the same time be perfectly accessible, so that in case the trap or eduction pipe become choked or clogged they may be readily cleaned and put in proper order by any person of ordinary ability, no mechanic or artisan being required, as is the case with the ordinary traps; the latter being below the article to which they are applied, and altogether inaccessible except the pipe enclosing the same be cut, an operation attended with considerable trouble and expense.]

30,122.—William Cleveland, of Orange, N. J., for an Improvement in Faucets:

I claim, in combination with the body and top of a faucet, one of which is packed with suitable flexible material, the elastic washer, e, for the purpose and substantially in the manner described.

I also claim the recesses, m m, in the inside of the body of the faucet, to allow the packing to swell or distend into, and thus prevent it from being injured or misplaced by the turning of the tap, substantially as described.

I also claim, in combination with the packing, the ribs or projections, O, that embed themselves therein, to prevent the said packing from slipping out, substantially as described.

30,180.—Antonio Meucci, assignor to the New York Paraffine Candle Company, of Richmond county, N. Y., for an Improvement in Apparatus for Molding Candles:

I claim the combination of die and candle guide, substantially as described, for the purpose of finishing candles.

I also claim the combination of an elastic strap with the receiving bed, for the purpose of holding the candle in contact therewith.

I also claim the combination of die, candle guide, K, and candle receiving bed, substantially in the manner and for the purpose described.

RE-ISSUES.

M. A. Dietz, of Brooklyn, N. Y., for an Improvement in Lamps. Patented September 8, 185d:

I claim an air chamber in combination with the chamber formed by the concavity of the deflector of a lamp top, substantially as described.

I also claim the combination of an air chamber for supplying air to the interior of the cone with openings for the admission of air on the outside of the cone, between the latter and the inside of the chimney, substantially as set forth.

I also claim forming a communication between the oil chamber and the cone chamber. o, by means of openings in the shell of the lamp top, substantially as described for the purpose set forth.

A. M. Mace, of Springfield, Mass., for an Improvement in Vapor Lamps. Patented June 22, 1858:

I claim, first, combining the cap or heat retainer, H, with vaporizing tubes or retorts, constructed substantially as described, when so arranged over the flame as to operate in the manner set forth.

Second, I also claim the combination of the heat retainer, H, and vaporizing tube, connected substantially as described, with the elevated reservoir; the whole arranged and operating with respect to the valve, C', and burner, K, as set forth.

Third, The syphonic vapor or gas generating tube or retort, B A, or its equivalent, whereby the material from which the gas is generated is carried over or above the flame of the gas or vapor burner and subjected to the heat of the flame issuing therefrom, and converted into gas or vapor, substantially as set forth.

William Fulton, of Cranberry, N. J., for Improvement in Lamps. Patented August 3, 1858. Re-issued Sept. 13, 1859:

I claim, first, The perforated plate, C, or the gauze wire, C, for the purpose of regulating the elastic force of the air so that it may be presented evenly to the flame or their equivalent.

Second, I claim the perforations, b, in the lower part of cap, D, as shown in Fig. 1, in combination with the perforated or air distributing plate, C or the gauze wire, C, or their equivalent.

Third, I claim the register formed of the perforations, e, in the bottom, A, as shown in Fig. 5, in combination with the perforated plate or gauze wire, C, and the holes, b, in the lower part of cap, D, as shown in Fig. 1, the whole being arranged substantially as and for the purpose herein described.

JOHN J. GRIFFIN & CO.,

No. 7 BEEKMAN Street, and 76 West 37th Street,

NEW YORK CITY,

MANUFACTURERS OF WET AND DRY GAS-METERS,

Station-Meters, Proving-Machines, Show-Meters, Test-Meters, Pressure Indicators, &c.

All of our Work is Guaranteed to be of the First Quality, as well as the material, and for this we can refer to numerous Gas-Light Companies.

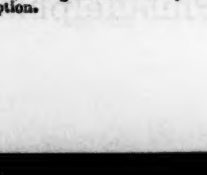
CODE, HOPPER & GRATZ,

1500, 1502 and 1504 FILBERT-ST., PHILADELPHIA.

MANUFACTURERS OF

Pressure Registers, Pressure Indicators, Pressure Gauges, Photometers, Governors, Station Meters, Customer Meters, (Wet and Dry,) Experimental Meters, (Wet and Dry,) Show Meters, (Wet and Dry,) Meter Provers, Centre Seals, &c.

The high reputation which we have enjoyed for more than twenty-two years, and the fact that we have manufactured a greater number of Gas-Meters than all other manufacturers in this country combined must present itself as a security to parties desirous of securing the most reliable instruments. Having completed a most extensive addition to our Factory, and added many important improvements to our machinery, we are enabled to fill orders entrusted to us with dispatch, and in all cases *Guarantee Entire Satisfaction.* Our Patent Rotary-Valve Dry Gas-Meter is now used by upwards of Two Hundred Gas Companies, giving general satisfaction; we therefore recommend it, believing it superior to any other Dry Gas-Meter manufactured. All Meters tested separately by a sworn Meter-Inspector and sealed when desired.



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NEAR NEWCASTLE-UPON-TYNE, ENGLAND,

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FLEXIBLE GAS FITTINGS.

The existing great demand for Hancock's ENAMELLED or GLAZED FLEXIBLE TUBING, and the increased facilities of manufacturing it, is an assurance of the satisfaction experienced by the public in the use of this article, so extensively made by JAMES LYNE HANCOCK, OF LONDON, who begs now to announce to the trade, that he continues to export, to a large extent, FLEXIBLE GLAZED TUBING for GAS, Surgical and other instruments, now in such general use amongst Gas Companies, Engineers, Gas-fitters and others.

This is the only TUBING that perfectly resists the action of coal gas. It is made of all sizes, from ⅛ inch up to 1½ inches, and in 60 feet lengths. The measure is always external diameter, to connect the usual metal fittings.

SOLID VULCANIZED INDIA RUBBER TUBING, for GAS, WATER, &c., made of all sizes, and in 60 feet lengths, either with or without spiral wire inside.

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N. B.—Orders by post, with remittance, or good reference in England, will be promptly executed.

COWEN'S PATENT FIRE-CLAY Retorts.

JOSEPH COWEN & Co., Blaydon Burn, near Newcastle-on-Tyne, England, were the only parties to whom a Prize Medal was awarded at the Great Exhibition in London, of 1851, for "GAS RETORTS AND OTHER OBJECTS IN FIRE CLAY."

J. C. & Co. have been for many years the most extensive manufacturers of Fire Clay Retorts in the United Kingdom; and orders for FIRE CLAY RETORTS of all shapes and dimensions, FIRE BRICKS, and every other article in Fire Clay, are promptly executed at their works as above.

COWEN'S GARESFIELD COAL AND COKE.

Coal and Coke office,

QUAY SIDE, NEWCASTLE-ON-TYNE.

WILLIAM RYDER,

General Mineral and Metal Agent and Merchant, 4 Dean street, NEWCASTLE-ON-TYNE, England, is prepared to supply Gas Companies and others with every variety of appliance for the production and supply of Gas, including GASOMETERS, RETORTS (metal and clay), FIRE BRICKS, COALS, METAL MAINS, TUBES, in wrought iron, copper, brass, lead or composition, METERS, TAPS, FITTINGS, &c., &c.; and from his extensive experience in this class of work, can guarantee every thing of the best description.

JOHN ROGERSON & CO., New-Castle on-Tyne, Middlesbro'-on-Tees,

London, supply Gas Coal, Clay Retorts, Cast Iron Pipes and Retorts, Gasometers, &c. A partner of the above house being now in this city, will be glad to wait upon any gas company requiring supplies. Agents, MEAD & BELL,

17 William street, New York.

NEW YORK FIRE-BRICK Manufactory. (Branch Works at Kreischerville, Staten Island.)

B. KREISCHER & CO., office 56 Goerck street, corner Delancy street, New York.

GAS-HOUSE TILES and FIRE BRICK of all shapes and sizes. FIRE MORTAR, CLAY, and SAND articles of every description made to order at the shortest notice. B. KREISCHER, M MAURER, A. WEBER.

PATENT PYRO-CLAY GAS RETORTS. THOMAS HOADLEY, Patentee,

wishes to call the attention of Gas-engineers to these Retorts, as a very superior article.

REFERENCES:—Gas-Light Works, Buffalo, N. Y.
" " Cleveland, O.
" " Chicago, Ill.

THOS. HOADLEY, 34 Front st., Cleveland, O.

CELLULAR GAS RETORTS.

C. M. CRESSON'S CELLULAR GAS Retorts, Patented October 3d, 1854. Adapted to the manufacture of GAS from Rosin, Coal, Wood, &c., and now in use at the Philadelphia Gas Works. Patent Rights for sale. For information apply to HENRY S. HAGERT, Attorney for Patentee, S. E. cor of Walnut and Sixth streets, Philadelphia, Pa.

GAUTIER'S CLAY RETORTS.—

Fire and Arch Bricks, Gas-House Tiles, &c. Black Lead Crucibles for Steel Works and Brass Founders.

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Merchants, Importers of

BELGIAN FIRE-CLAY GAS RETORTS,

Dealers in Tiles, Arch-Bricks, Furnace-Doors, Mouth-Pieces, Covers, and all other Fittings, of the most approved patterns, for setting Clay Retorts. Sabbaton's Patent Furnace-Doors and Frames, Floyd's Patent Malleable Iron Retort Covers, McKenzie's Patent Gas Exhausters, made by Addison Smith, Compensator Valves, &c. Gas, Water, and Steam Tubes

ENGLISH FIRE BRICKS, Rufford's Stourbridge Bricks, Stourbridge and Welsh Clay.

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Manufacturer of all kinds of FIRE-BRICK, GAS-HOUSE TILES, to suit all the different plans in use. Clay Retorts and Dentists' Muffles. Orders filled at short notice.

CLAY RETORTS.—J. K. BRICK & Co.—Brooklyn Clay Retort and Fire-Brick Works, Van Dyke, near Van Brunt street, Brooklyn, N. Y.—Manufacturers of Clay Retorts, Fire Brick, Gas and Hot House Tiles, Arch, Furnace and Cupola Brick, Fire Cement, Mortar, &c.

J. K. B. & Co. would invite the attention of Gas Companies to the important fact, that the Clay Retorts manufactured at their Works can be set without Tiles, requiring to be supported only at the front and rear ends, thereby exposing the entire surface of the Retort to the direct action of the flame from the furnace.

The results of this mode of setting, are a Saving of Fuel, Tiles, Transportation of Materials, Labor and Space, thereby enabling Gas Companies to set Retorts of at least 50 per cent. greater capacity than those usually employed in the ordinary arches.

FOR SYMMES' PATENT RETORTS, Mouthpieces, &c. address—

ELLIMAN BROTHERS, 217 Pearl-st., New York.
MORRIS, TASKER & CO, Philadelphia.
HORATIO EAGLE, 254 Canal-St., New York.
Or H. K. SYMMES, Newton, Mass.

See Engravings in AMERICAN GAS-LIGHT JOURNAL for July 1, 1860, page 280.

KENNEDY'S Method of Securing Iron Mouth Pieces to Clay Retorts.—

The Retort is made in the usual form, but without any bolt-holes through the flange. An iron collar made in two pieces, is then placed around the Retort behind the flange, and bolted to the mouth-piece by bolts which pass just outside of the flange instead of passing through it. As each Retort costs about $30, and as the breaking out of the bolt-holes entirely ruins the whole Retort, the importance of this simple but valuable improvement will be readily appreciated.

By this improvement the mouth-piece is firmly attached to Clay Retorts in a simple and very substantial manner, the bolts passing from the yoke to the mouth-piece on the outside of the Retort. The yokes are furnished at a low price, ready to be put on. For Engravings, see AMERICAN GAS-LIGHT JOURNAL for June, 1860, page 245. Address the Patentee,

JOHN P. KENNEDY, Trenton, N. J.

THE AUBIN GAS-WORKS CO., No. 44 State street, Albany, N. Y.,

will refer parties wanting GAS-WORKS FOR VILLAGES to seventeen of their Village Works now in operation in the United States and the Canadas in *every one of which the profits of the company are ten per cent. and upwards, and yet good gas is furnished.* Agents wanted to extend the sale of the AUBIN PORTABLE GAS STOVE for dwellings, factories, &c., which will make 1000 feet of gas in five hours, and with greater simplicity, safety and economy, than any other known apparatus.

JAMES RENWICK SMEDBERG, Consulting and Constructing GAS-ENGINEER. SAVANNAH, Geo.

REFERENCES:

CHARLES ROOME, Esq., Pres. Man. Gas Co., N. Y.
J. K. BRICK, Esq., Eng'r. Brooklyn Gas Co., "
Messrs. ELLIMAN BROTHERS, New-York.
F. T. WILLIS, ESQ., Pres. Savannah Gas Co.
J. A. SABBATON, Esq., Eng'r. Man. Gas Co., N. Y.
JOHN B. MURRAY, Prop. AM. GAS-LIGHT JOUR.

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WATERHOUSE & BOWES Builders of Gas-Works, Raleigh,

N. C.—Gas-Works erected in any part of the United States.

REFERENCES.

J. H. Carson,	Pres't,	Charlotte, N. C.	Gas-W'ks.
D. G. Fowle,	do.	Raleigh	do. do.
J. C Smythe,	do.	Salisbury	do. do
Arch. McClean,	do.	Fayetteville	do. do.
Jos. A. Waddell,	do.	Staunton	Va. do.
A. G. Story,	do.	Little Falls	N. Y. do.
G. H. Young,	Prop'r	Waverley	Miss. do.

Wm. Johnston, President of Charlotte & S. C. R. R., Charlotte, N. C., A. B. Wood, Agent Reading Iron Works, 57 Maiden lane, N. Y., Cornelius & Baker Manufacturers of Gas-fixtures, Philadelphia.

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PORTABLE GAS WORKS.—S. T. McDOUGALL'S PATENT Portable Gas Works,

for making Gas from Rosin, Rosin Oil, Coal Oil, Naptha, Grease, etc. These Works combine the latest improvements in gas making, and are guaranteed to be superior to any in market. They are made of all sizes, suitable for either country or city use. No county house is complete without its Gas Works. Gas Stoves of every description on hand and made to order. For sale by S. T. McDougall, 170 Center Street, New York.

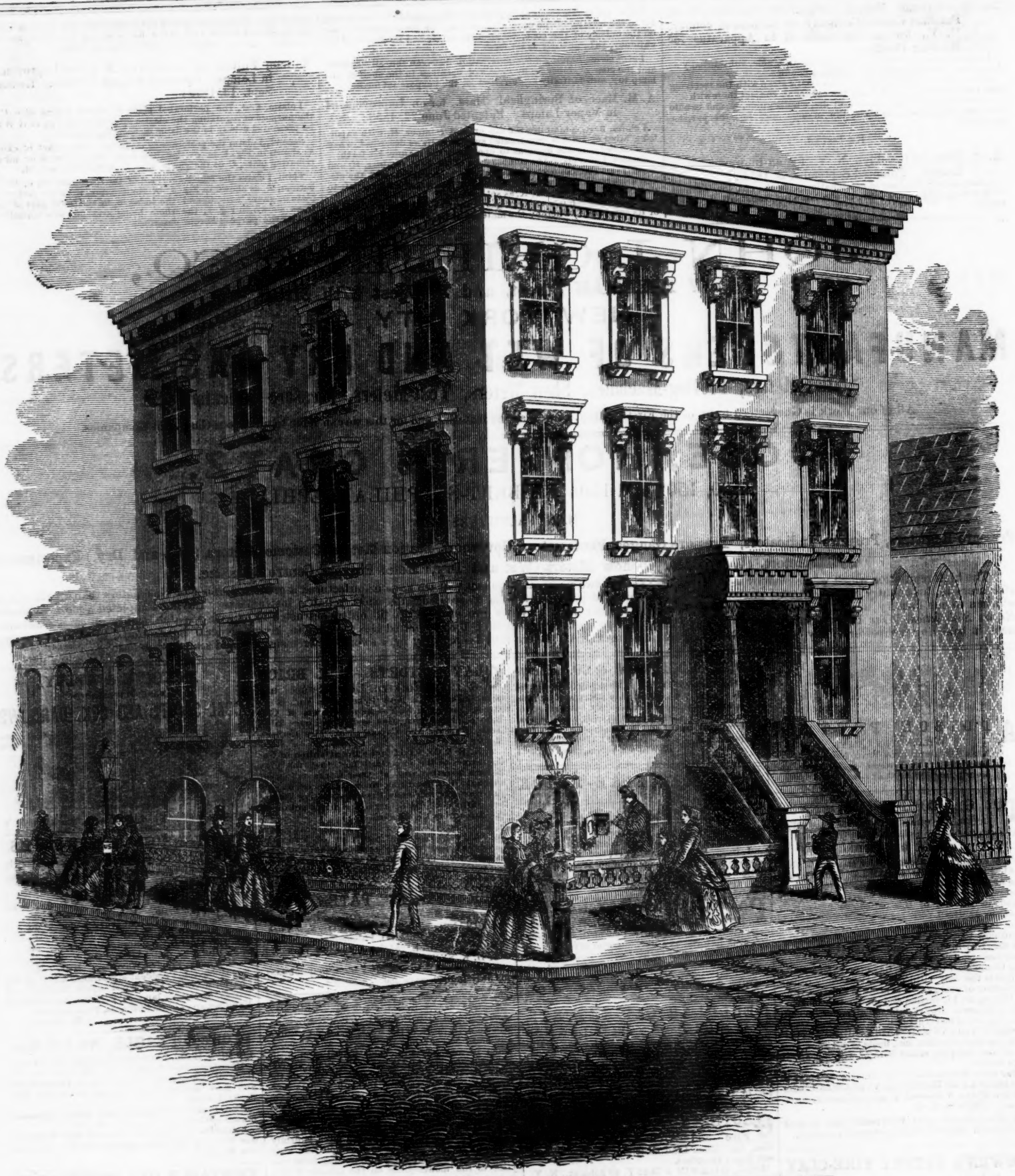
Agents wanted in other cities to sell rights or machines

Cast Iron Street Lanterns, neat and very durable.

For sale by JOHN JEFFREY, Cincinnati, Ohio.

Street Lanterns cast in three pieces, which are fitted together without bolts, rivets, solder or other fastenings; glazed without tins, putty, or catches; the glass slipping into grooves cast in the lantern. These lanterns have been adopted, and are now used, by the City Councils of Cincinnati, O., Covington, Ky., and other cities.

STEPHEN SCAMMON, Gas Engineer and Contractor for the erection of Gas-Works; also, dealer in CAST and WROUGHT IRON PIPE for Steam, Water and Gas, No. 561 Broadway, New York.



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1.—Improved Mode of Setting Gas-Meters in the Walls of Buildings.

2.—Cast-Iron Mail-Stations for Public Lamp-Posts.

Adopted by the UNITED STATES GOVERNMENT for the Principal Cities.

ALBERT POTTS, Philadelphia, Patentee.

By the FIRST IMPROVEMENT the Meters may be inspected at any time from without, by the agents of the Gas-Company having keys for that purpose. Thus burglars need no longer gain admittance to dwellings under pretense of examining the meters, while they, in fact, examine the fastenings. The meter-box, being neatly and securely imbedded in the front wall, the meter is protected against frost by means of a thick pad on the back of the door. It has been satisfactorily tested in long continued severe weather and found to be eminently successful.

The SECOND IMPROVEMENT speaks for itself. The cities of New York and Philadelphia are already supplied with these boxes, and the convenience to the citizens and increase of revenue to the Post Office Department are most marked. Always in sight, securely fastened to the most public objects, protected by light, day and night, they have become the most popular of all modern improvements and will be immediately adopted throughout the country.

Both of these improvements are to be seen at the Rooms of the AMERICAN GAS-LIGHT JOURNAL, New-York City. For further information address the Proprietor of this JOURNAL, who is authorised to contract for the use of both Improvements, or

ALBERT POTTS, Philadelphia.

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THE OLD TUBE WORKS, WEDNESBURY, AND THE ALMA WORKS, WALSAL, STAFFORDSHIRE

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ALL GOODS WARRANTED.

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NON-FREEZING AND NON-EVAPORATING
GAS-METER FLUID.

By the use of this Fluid, the WET GAS-METER of ordinary construction is rendered the most perfect and most reliable Gas-Measuring Instrument ever offered to Gas Companies. In winter the Meter will continue to work equally well, *however exposed it may be*; and in summer, the level of the Fluid remaining constant without refilling, the measurement of the Gas will be both uniform and constant.

The use of this Fluid is both easy and economical, and Gas Companies desirous of using it, will be licensed on liberal terms. For further particulars, and certificates of parties having used the same for over three years, and for city rights, apply to

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N. B.—No Sales of Territorial right, or Licenses for using my Patent will be valid, without being ratified by my Signature, as I have no Agent authorized to execute the same.

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GASOMETER RIVETS.

Every kind of Rivets used in Gasometers.

CANDLES FROM COAL.—A New Invention, Manufactured by the NEW YORK PARAFFINE CANDLE COMPANY, UNDER MEUCCI'S PATENT.

These Candles being made from one of the products of the distillation of Coal, and having the same chemical constituents as gas, being, in fact,

GAS SOLIDIFIED,

are eminently adapted for giving light. They took the highest premium at the late Fair of the American Institute, held October, 1859, as may be seen from the following extract from the report of the Committee:—

"Our tests with the Photometer showed that the Paraffine Candles above referred to, as compared with the best Sperm, had greater illuminating power, gave a softer and pleasanter light to read by, and burned full ten per cent. longer than the standard Sperm Candle, and we recommend it as deserving the highest premium of the Institute.

"ISAIAH DECK, M. D.,
"Analytical and Consulting Chemist.
"JOSEPH YATES,
"Civil Engineer."

The Candles manufactured by this Company are warranted to stand all climates, will not run or gutter, and require no snuffing, and, unlike some other so-called Paraffine Candles,

DO NOT SMOKE IN BURNING OR BECOME YELLOW WITH AGE, AND ARE WITHOUT ODOR.

CAUTION.—As an Imitation Candle is already offered in the market, purchasers should bear in mind that every box of Candles sold by this Company is stamped with its adopted trade mark, which is a circle, enclosing the words, "NEW YORK PARAFFINE CANDLE CO., MEUCCI'S PATENT, 1859," with our trade mark as above, to imitate which is felony by law.

WM. E. RIDER, 16 Beekman-st., N. Y.,
Agent for the Company.

TO COAL OIL REFINERS.—Having made arrangements with the Proprietor of the principal wells yielding Petroleum, or Seneca Oil, in the State of Pennsylvania, we are constantly receiving supplies, and are prepared to offer this article on the most favorable terms, and in quantities to suit purchasers. SCHIEFFELIN BROTHERS & CO.,
170 William street.

STANDARD Photometric Candles.—Owing to a number of Applications made to me for information concerning the supply of the "Standard Sperm Candles," used in Photometrics, I have obtained a supply, from which I can furnish those who require them with full directions for use. T. W. PARMELE,
No. 4 Irving Place, New York.

TO CANDLE AND SOAP Makers.—Processes with drawings to manufacture every kind of candles and soaps by different processes: Candles by distillation, saponification, French candles, common candles, hard and soft soaps, palm soaps; processes to bleach palm oil and make candles out of it; purification of tallow; essays on greases and soaps. Address, Professor H. DUSSAUCE, Chemist, New Lebanon, N. Y.

SCHWARZ'S PATENT STEAtite, or Lava Gas-Burner Tips.—These obtained a Gold Prize Medal in Europe, where they are now extensively used in place of metal tips. In Prof. Liebig's and other Chemists' works, these burners are recommended as *indestructible by acids or alkalies, unchangeable by heat or cold, not liable to rust or corrosion*, and superior in economy to the metal tips. Boston and other cities have adopted them for street lights after a satisfactory trial. They are imported from Germany by the undersigned, sole Agent for America, who can now supply the trade or cities at reduced prices, with any pattern of tips to fit the double cylinder or other kind of burners. For sale also, large Gas-Heating Burners, of same material, for Chemists, &c. W. W. WARREN,
25 Kilby-st., Boston

EMPIRE STATE COAL OIL CO.—Manufacturers of Refined, Bleached, and Deodorized Coal Oil, Factory on Smith street, Brooklyn, L. I.; Store, 240 Pearl street, corner Burling Slip, New York

Rosin Oil and Rosin.—For sale of our own manufacture a superior article of ROSIN OIL, for Gas purposes. Also Refined Oil. For shipment in secure iron-bound barrels, or by any single barrel.

Address MARYLAND GAS COMPANY, No. 6 Bank of Baltimore Building, Baltimore, Md.

P. S. This Company is also prepared to construct their superior Patented GAS WORKS of any capacity, from that required for a private dwelling, hotel, church, college or factory, to such as will supply cities and towns, complete in all their parts for the manufacture of GAS, from either Rosin Oil, Coal, or Rosin.

J. L. McREA, Dealer in Coal Oils and Lamps, Binnacle and Signal Light Oils, 139 Water street, New York.

FRANKLIN COAL OIL WORKS.—Paraffine, Benzole, Naptha, Distilled Orude Oil, Axle Grease, Pitch.

ROBERT A. CHEESEBROUGH,
Depot 204 Pearl st, cor. Maiden Lane, N. Y.
Works on Red Hook, Brooklyn, manufacturer of Illuminating, Lubricating, Binnacle and Head Light Coal Oils. Also, Agent for the Aladdin Coal Oil Works, Pittsburg.

STREET GAS-LANTERNS.

Cities and Gas Companies furnished at reasonable rates with Lanterns, Iron Frames, Glazed Complete or Separate. Also, Fancy Lanterns, for Hotels, Restaurants, Theatres, Telegraph Offices, Churches, and other Public Buildings. Having been in the business for many years I fully understand the manufacture of Gas Lanterns, and with the aid of machinery can make the parts cheaper than any other manufacturer. Orders from a distance solicited, and executed promply.

A. C. PARRY,
31 Race Street, Cincinnati, Ohio.

ENAMEL DIALS FOR GAS AND WATER METERS,
BOTTOMLEY & HINES, MANUFACTURERS, West Philadelphia, Pa.
The best, therefore the cheapest for Gas and Water Meters and Engineers' Indicators.

These Dials are particularly adapted to all purposes where gas, gas-vapors, or acids, are present. Also, Watch and Clock Dials of every description, from any size up to 14 inches diameter.

The undersigned embrace this opportunity of returning their thanks to the gas-meter manufacturers throughout the United States, for the very liberal patronage they have received for the past ten years, during which they have been established in Philadelphia, which has placed us ahead of all competition. Our sales for the past year have been far greater than we could have anticipated, with the prospects of a steady increase. Our constant aim has been, and will be, to adopt all improved processes of manufacture, combining improvementin uality with reduction in price. All Dials made by us are warranted to be as represented, and of the best materials and workmanship, which will recommend them to all parties wishing the very best. Circulars sent free by mail, or on application.

We are the appointed agents for HUNTER, SHEARMAN & CO.'S make of BRASS PINION-WIRE for Gas-meters, which we believe is equal to the best.

WEST TROY, (N. Y.,) IRON FOUNDRY.

AUGUSTUS VIELE, Manufacturer of Gas and Water Pipes of all sizes. DRIPS, SYPHONS, BENDS, AND BRANCHES. The manufactures of this establishment are in use in various Gas and Water Works throughout the country.

Address AUGUSTUS VIELE, West Troy, N. Y

OREGON FOUNDRY, Nos. 740, 742, 744 Greenwich street, New York.

HERRING & FLOYD, proprietors, manufacture Gas Compensators of all sizes, Self-Acting Valves, Exhausters upon an improved plan, costing less than half those of English manufacture, also castings of every description for Gas and Water Works.

Herring & Floyd offer for sale Sabbaton's Patent Screening Shovels for coke and coals, made of malleable iron, of all sizes; Sabbaton's Patent Improved Cast Iron Furnace Frame and Door, arranged to protect the iron work of the door and frame from direct contact with the fire; also Floyd's Patent Malleable Iron Retort Covers, only quarter of an inch thick, but of convex form, and of great strength, as is attested by certificates from several of the leading Gas-works in America. For engravings of all the above patents see AMERICAN GAS LIGHT JOURNAL for October, 1859, pages 65 and 71.

Samples of the above castings can be seen at the Rooms of the AMERICAN GAS-LIGHT JOURNAL.

COLWELL & CO., Manufacturers of Pig Iron and Cast Iron Gas and Water Pipes, No. 207 North Water street and 206 North Wharves, Philadelphia.

STEPHEN COLWELL, W. DWIGHT BELL,
THEO. TREWENDT, SAMUEL FULTON.

STUART & PETERSON, Willow street, above Thirteenth, Philadelphia, Manufacturers of LAMP POSTS and CAST IRON STREET-LANTERNS

P. S.—Our Cast Iron Lanterns are warranted to out last three Tin Lanterns.

HUNTER, KELLER & CO., Manufacturers of

WROUGHT-IRON PIPES, AND FIXTURES

of all descriptions, for

STEAM, WATER AND GAS,

144 Centre street, New York.

TRANER & MERCER, 117 North Water street, and 124 North wharves, Philadelphia, AGENTS FOR FLORENCE & MERCER FOUNDRIES, ELK STREE IRON WORKS.

CAST IRON STREET MAINS; *Bends, Branches, Chemical Retorts, and all kinds of Castings for* GAS-WORKS, either COAL or ROSIN WORKS. SHEET IRON FOR GASOMETERS *cut and punched to order.* BOILER IRON *of all descriptions.* RUSSIA SHEET IRON, TIN PLATES, BLOCK TIN, COPPER, PIG LEAD, SPELTER, and Metals generally.

GEORGE W. KRAFT, GASOMEter and Boiler-maker, Chestnut st. wharf, West Philadelphia, manufactures Gasometers, Retort House Roofs, Water Tanks Purifying Boxes, Coal Cars, Coke Barrows, and all kinds of Wrought Iron Work for Bridges, Buildings, &c.

Particular attention paid to Alterations and Repairs.

REFERENCES:

John C. Cresson, Engineer Gas Works, Philadelphia; Joseph A. Sabbaton, Engineer Manhattan Gas Works, New York; Col. W. S. Campbell, Engineer Gas Works New Orleans; P. A. Sabbaton, Engineer Gas Works, Albany; Waterhouse and Bowes, Gas Engineers, Raleigh, N. C.; Joseph Battin, Newark, N. J.; C. B. Dungan, Philadela.

BERGEN IRON WORKS.
Established 1833.

R. A. BRICK, Manufacturer of CAST-IRON WATER and GAS PIPES. RETORTS, PIPES, &c., always on hand, Office 109, Leonard street, New York.

A. & G. BRANDON, Manufacturers of Street and Fancy

LAMPS,

of every pattern, for Hotels, Saloons and Public Buildings, on hand and made order.

Cities, Villages, and Gas Companies supplied with Street Lamps, on favorable terms. Office, No. 4 TYRON Row, City Hall Square, and Manufactory, No. 102 Mulberry street, one door from Canal street, New-York.

CAST IRON WATER, GAS, DRAIN, AND HEATER PIPES, &c.,

COLUMBIAN IRON WORKS,

OFFICE, No. 46 NORTH SEVENTH STREET,
Below Arch street, Philadelphia.
THOS. M. ADAMS, Proprietor.

PIPE, PIPE, PIPE, PIPE, PIPE.—Plumbers, and all others who use Cast-Iron Drain Pipe, will do well to call at the Pipe Foundry, 39 Greene street. A large lot of Five and Six Inch, Seven Foot length, on hand, and for sale low. A. & E. B. BRADY.

CAST AND WROUGHT IRON Pipe, Branches, Elbows, Sleeves, &c. Lamp-posts, Wrought iron Lanterns for Lamp-posts, Gas Retorts (clay or iron), Street Mains in 9 or 12 feet lengths. Sheet iron cut to pattern for Gas-holders. For sale by the manufacturers' Agent,

HENRY G. NICHOLS, 24 Pine-st., N. Y.

R. D. WOOD & CO., Manufacturers of Cast Iron, Gas and WATER PIPE; RETORTS, LAMP-POSTS, &c. S. W. corner 4th and Chesnut streets, Philadelphia. Works at Millville, N. J

NORRIS & GREGG,

DEALERS IN WROUGHT IRON Pipe, and Manufacturers of Fittings for Steam, Gas, and Water, Nos. 62 and 64 Gold street, (between Beekman and Fulton streets,) New York.

THOMAS H. NORRIS. CHARLES GREGG.

GIRARD TUBE WORKS. Murphy & Allison, Proprietors. Wrought Iron Coke-Welded Tubes, for Gas, Water, Steam, &c. Wrought, Cast and Malleable Iron Fittings. Steam and Gas Cocks, Valves. Also, Galvanized Tubes and Fittings.

Office 1908 Market street, Philadelphia.

AMERICAN TUBE WORKS.—W. G. Smith & Co., Forty-sixth street, east of 10th Avenue, New York City. Manufacturers of

WELDED IRON PIPE.

for Steam or Gas, of all sizes, from 1-8th to 8 inches.

EXCELSIOR IRON WORKS.—GEORGE R. JACKSON & Co., (Successors to Cornell & Jackson,) 201 Centre street, cor. of Howard, New York.—Fire-Proof Doors, Vaults, Safes and Shutters, Enameled Grates and Fenders, Iron Railings, for Public Buildings, Dwellings, Balconies, Verandahs, Stair-cases, Parks and Tombs, Prismatic Platforms and Vault Lights, Columns, Girders, and all kinds of Castings for Building purposes.

☞ Casting for the Trade.

BENJAMIN PIKE & SONS, Opticians, Importers and Manufacturers of Mathematical and Philosophical Instruments, No. 518 Broadway, (opposite St. Nicholas Hotel), New York.

Gold, Silver and Steel Spectacles; Barometers, Thermometers, Surveying Compasses, Theodolites, Levelling Instruments, Opera Glasses, Telescopes and Microscopes; Air Pumps and Electrical Machines. Instruments and Spectacles repaired. Periscopic Glasses and Pebbles.

DANIEL PIKE. GARDINER PIKE.

KIDDER'S GAS-REGULATOR.

HORATIO EAGEE,

SOLE AGENT,

126 MAIDEN LANE, Between Pearl and Water Streets,

NEW-YORK:

This valuable machine, of which drawings are annexed, is offered to the public as the most perfect instrument of the kind, and capable of sustaining the most thorough scientific test, and what is of more consequence to consumers, the test of practical daily use.

The machine is wholly self-regulating, and when once adjusted will supply one burner, or all the burners from a meter, with gas at any desired pressure under that given from the gas companies, mains. When the pressure from the street is less than is requisite for economical consumption, (which is 5-10ths of an inch,) the machine ceases to operate, and comes into use again upon an increase of pressure above the rate at which it is set.

Upon the introduction of KIDDER'S REGULATOR, it was tested by the highest authorities in gas making and burning, including Charles Roome, Esq., President Manhattan Gas Works, Professors Ellett, Gibbs and Torrey of New York, Mr. Cresson of Philadelphia, and many other eminent gas engineers. The evidence of Messrs. Roome, Ellett, Gibbs and Torrey is afforded as all that is necessary upon the point of scientific accuracy as a Regulator.

KIDDER'S REGULATOR is in use upon the most important factories in New England, and has been tested in thousands of private houses, hotels and factories, and in no case has it failed as a perfect regulator and economiser.

With KIDDER'S REGULATOR in use, no gas can possibly be wasted. The amount saved will be in proportion to the excess of gas above the desired pressure, all over 5-10ths of an inch being useless and expensive. As a rule, the saving is 25 per cent. In some cases it is largely above this, and in rare cases less.

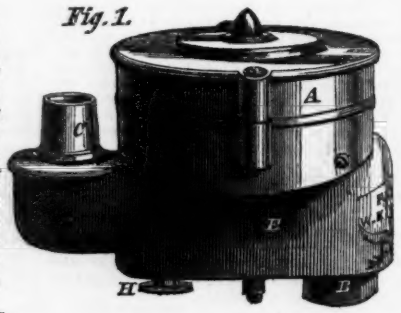
The REGULATOR is as lasting, and needs as little care as a meter. It may require attention when placed upon a wet meter, from an occasional accumulation of water, but upon a dry meter will outlast the meter itself. For accuracy in operation, through many years, without the smallest adjustment, the KIDDER REGULATOR challenges examination by consumers or gas engineers.

The Subscriber is prepared to sell the Patent for cities, or to supply consumers or the trade throughout the United States upon the most favorable terms, which will be made known upon application.

DESCRIPTION.

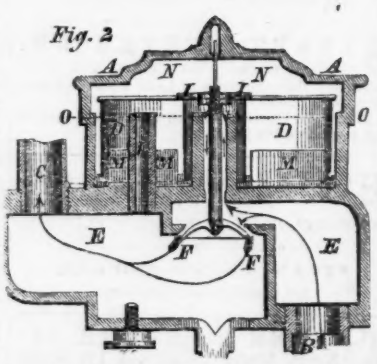
The annexed engravings represent a perspective view and a vertical section of a machine for regulating the flow of gas, for which a patent was granted to Walter Kidder, October 12th, 1852.

Fig. 1.



A, cover of the regulator, made of cast iron. B, brass connection to connect regulator to the outlet coupling of the meter. C, brass connection to connect regulator with the main pipe through the building for the passage of gas. D, screws to hold the cover down. E, main body of the regulator, and is a solid cast iron, which will avoid all danger of explosion or corroding. H, brass screw to let off condensed water, if any.

Fig. 2.



A is the outside frame, which is made of cast iron. B is the brass connection where the regulator connects with the outlet coupling of the meter. C, brass connection, with main pipe up through the building. D, a small cylindrical gasometer, (of sheet iron), which overbalances the valve at F F, and closes the aperture as the pressure increases, and being situated above the current of gas, is always free from tar or other impurities. Its bottom edge rests in a reservoir of mercury, by which the escape of gas and the dangers of explosions are prevented. E is the gas reservoir, into which the condensed water, tar, &c., flows, and prevents its coming in contact with the working part of the machine, and obstructing or flooding the same. F F are apertures around the valve where the gas is supplied to the main pipe, and thence to the burners. G, button valve to govern the supply, and is acted upon by the gasometer, which balances itself in the street pressure. H, screw for letting off condensed water. I, one or more weights used to govern the pressure by increasing or diminishing as the lights may require. L, gasometer supply tubes. M, solid iron bed, to prevent the use of too much mercury. N, cap of the machine, which incloses the whole inside, and which is held down by screws. O, aperture where the cap is removed.

This regulator balances itself in the street pressure, and as this contains the whole principle, we confidently assert that nothing can be or has been gotten up that will govern the street pressure unless it be an infringement of this patent. It is easily applied, can be varied in a moment to give a larger or smaller light (but will always remain the same as set,) cannot get out of order, and by burning at so low a pressure (·4 of an inch instead of 3 inches, at which the gas companies furnish it to insure a delivery to all, although higher than is consistent with economy,) a perfect combustion is gained which gives a pure atmosphere, a pure and soft light, and avoids the inhaling of the impurities of the unconsumed gas, while the saving varies from 25 to 60 per cent. in favor of the consumer. It is a well ascertained fact that 3 cubic feet of gas burned under a pressure of ·4 of an inch will give as much light as 4 cubic feet will under a pressure of 1·5 of an inch, or as 6 cubic feet at 3 inches, and of a more agreeable nature. The variety of uses to which gas is now being applied increases the demand for the regulator, as it is necessary to each and every one of them. The mechanical arrangement of this regulator is perfect as a philosophical instrument, as it first counterbalances the street pressure, and is then moved by the house pressure only, so that the most extreme difference of pressure in the street does not in the least vary it while it moves (closing or opening the valve) whenever a burner is lighted or extinguished. This is a principle which no other regulator has, as it is covered by Kidder's patent; while again, by having its whole construction, by having its gasometer at the top of the machine and a reservoir at the bottom, prevents he constant difficulty of the machine being clogged and stopped by the deposit of tar and water on the top of the gasometer, which will condemn and render worthless any machine so made, and this is the only regulator that we have ever seen that could not clog up, thereby stopping its action. An examination will convince any one of its superiority, combining economy and real worth.

CERTIFICATES.

REPORT OF PROFESSORS TORREY, ELLET AND GIBBS.

NEW YORK, Oct. 22d, 1852.

We the undersigned have made numerous experiments upon the Gas Regulator of Dr. Walter Kidder, with the best instrumental means, and under circumstances the most favorable to test the practical working of it, and have been much gratified with the results obtained. We find it capable of regulating with great precision the pressure of the gas which supplies the burners, and of keeping it absolutely uniform at any determined point below that exerted by the gas as delivered from the streets. The introduction of this instrument, even if it were attended with no other advantage, would be most beneficial in producing a uniform consumption, instead of the variable one which has hitherto been a source of inconvenience and loss to the consumer.

But in another point of view, the economical value of this instrument to the gas consumer is most striking. In consequence of the great length of mains connected with any extensive gas establishment, it is necessary, for the purpose of insuring a sufficient supply to remote consumers, to employ a force which delivers it at a much greater pressure than is advantageous for its economical consumption.

We have satisfied ourselves by many trials, that as a general rule, three cubic feet of gas burned at the pressure of five-tenths of an inch, will burn as long a time, and give a quantity of light equal to that of four cubic feet burned at a pressure of one-and-five-tenths inches, which is a fair average pressure for street delivery; and as a general result, the employment of a lower pressure than that at which the gas is delivered to the consumer will produce a great saving to him. This saving is secured by the Gas Regulator of Dr. Kidder.

JOHN TORREY, Prof. of Chemistry, Col. of Phys. and Sur.
WILLIAM H. ELLETT, Prof of Chemistry, &c.
WOLCOTT GIBBS,
Prof. of Chemistry and Physics in the Free Academy,

MANHATTAN GAS WORKS, Oct. 23, 1852.

Enclosed I send a certificate setting forth as briefly as I can, the advantages of Dr. Kidder's admirable invention. I do not think it necessary to mention any experiments which I may have made; Drs. Ellett, Torrey and Gibbs have a book full, to be produced when needed. I will add here, however, to be used if you desire it, the result of an experiment made at these Works, and which can be repeated whenever desired.

With a street pressure of four and a half inches of water, and one burner near the governor, the pressure of the burner guage was seven-tenths. The governor remaining untouched, the number of lights was increased to 54, extending over a surface of several hundred feet, and the street pressure was reduced to two inches, and the pressure guage at the governor remained, as before, seven-tenths.

CHARLES ROOME.

MANHATTAN GAS WORKS, Oct. 23, 1852.

The Gas Regulator of Dr. Kidder is, in my opinion, the most valuable instrument for regulating the flow of gas to the burners that I have ever seen.

It is correct in principle, and will accomplish admirably the objects for which it was designed.

It will insure great steadiness in the lights, and as the pressure at the meter is, by this instrument, reduced considerably below that on the street mains, it will enable the consumer to gain an equal amount of light at a smaller expenditure for gas; for the less the pressure under which the gas is consumed, the greater is the amount of light obtained. CHARLES ROOME, Engineer M. Gas Light Co.

NEW YORK, Oct. 1856.

We have Kidder's Gas Regulator, and are satisfied that, while it regulates the burning of gas, it saves in expense more than twenty-five per cent.

ALEX. T. STEWART & CO.

CHICAGO, Jan. 31, 1854.

I have carefully examined Dr. Kidder's Gas Regulator. In the test made I found that there was a pressure of four-tenths of an inch after passing the Regulator, while we have at the Gas Works a pressure of 2 8-10ths. In this instance the light was steady and uniform, and I cheerfully recommend their general use to all gas consumers. HENRY PARKINS, Chief Engineer of Chicago Gas Works.

OGDEN MILLS, Cohoes, N. Y.

A thorough and practical experience of over two years with Kidder's Gas Regulator in all the mills of this corporation, whereby a saving of over twenty-five per cent. and a better, more even and uniform light have been effected, is sufficient to recommend it to all consumers of gas who desire economy; and especially is it beneficial in factories where the waste is great and annoying when uncontrolled.

JENKS BROWN, Manager.

NASHUA, N. H., Oct. 1856.

We have three of Kidder's Gas Regulators in use, regulating 350 burners, and giving a more beautiful light than before. They avoid all trouble, and save twenty-five per cent. of gas, and are well worthy the attention of factory owners.

P. LAWTON, Agent, Jackson Company.

The Way to Cheapen Gas-Light.

The following is the consumption for five days in the Screw Company, at Providence, R. I., using Kidder's Gas Regulator:

With Regulator.	Without Regulator.
14th, 1300 feet.	15th, 1800 feet,
17th, 1300 "	16th, 1800 "
18th, 1300 "	

Showing a regular saving of *thirty-nine per cent.* With the Regulator one pays for the gas he burns; without it, for all the Gas Companies can force through their meters.—*N. Y. Express.*